9-1090-204-12

TM 9-1090-204-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

MOUNT, MULTIARMAMENT, HELICOPTER: XM156 (1090-930-5018) (USED ON UH-1B OR UH-1C HELICOPTERS)

This copy is a reprint which includes current pages from Changes 2 through 4.

HEADQUARTERS, DEPARTMENT OF THE ARMY

APRIL 1967

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Changes in force: C2

TM 9-1090-204-12
*C 2

Change No. 2

HEADQUARTERS,
DEPARTMENT OF THE ARMY
Washington, D. C., 23 May 1973

Operator and Organizational

Maintenance Manual

MOUNT, MULTIARMAMENT, HELICOPTER: XM156

(1090-930-5018)

(USED ON UH-1B OR UH-1C HELICOPTERS)

TM 9-1090-204-12, 10 April 1967, is changed as follows:

Change the designator "XM60" to read "XM60 series" wherever it appears throughout the technical manual except as indicated elsewhere in this change.

Page i. Safety Precautions is superseded as follows:

SAFETY PRECAUTIONS

Heading	Text	Reference
Caution	Other subsystem rack and support assemblies are not designed to support the weight requirements of the mount XM156 and shall not be substituted.	1-3 *a* (1)
Caution	Use only authorized rack and support assemblies on the mount XM156. The authorized rack and support assembly may be identified by the hexagon end machined on the visible end of the elevation adjustment stud (fig. 2-0.1). Rack and support assemblies for other subsystems have an elevation adjustment stud with a pinned nut on the visible end. These rack and support assemblies are otherwise identical in appearance to the rack and support assemblies for the mount XM156 but are not to be substituted because they are not designed to support the stores weight required for the mount XM156.	2-3.1 *b* (2)
Caution	Observe the arrow on the RKT PAIR SELECTOR switch. Set switch to "0" position before locking the arming panel into the pedestal panel of the aircraft.	2-3.1 *c* (2)
Caution	It is imperative that the approved practices and precautions be followed. TM 9-207 contains information which is specifically applicable to weapon materiel. It must be considered an essential part of this technical manual, not merely an explanatory supplement to it.	2-10
Warning	Do not attempt boresighting with rockets loaded in rocket launchers. Unload all rockets before proceeding.	2-18
Caution	Perform pre-flight services before any armament item installed on mount XM156 is loaded with ammunition.	3-6 *a* (1)
Caution	Support both rocket launchers before checking jettison circuit.	Table 3-3
Caution	Make sure that the OFF-SAFE-ARMED switch is OFF and that the helicopter battery is disconnected before connecting or disconnecting any mount electrical connector or before connecting or disconnecting any external power source to the helicopter.	3-8 *c*
Caution	For lamp replacement, make certain circuit breaker is open, lamp switch is set to off position, and old lamp has cooled.	3-12 *c*
Caution	Open circuit breakers before installing any mount XM156 component. Do not close circuit breakers or apply electrical power until all mount components are installed.	3-15

***This change supersedes Change 1, dated 30 March 1972, in its entirety.**

Page 1-3, paragraph 1-3 a (1) is superseded as follows:

(1) *Rack and support assemblies (fig. 1-1).* The left hand and right hand rack and support assemblies authorized for the multiarmament mount XM156 are identified by the machined hexagon head visible on the elevation adjustment stud. They are mounted externally on each side of the helicopter and are capable of carrying the 2.75-inch aircraft rocket luancher XM157, M158, M159, XM200 or other armament (stores), limited to 525 pounds per side from 14-inch spaced suspension hooks.

Page 2-1, Table 2-1. In line 1, "References" column, "Appendix B" is changed to read "Table 1-1".

Page 2-1, paragraph 2-2 is rescinded.

Page 2-1, add Section II as follows:

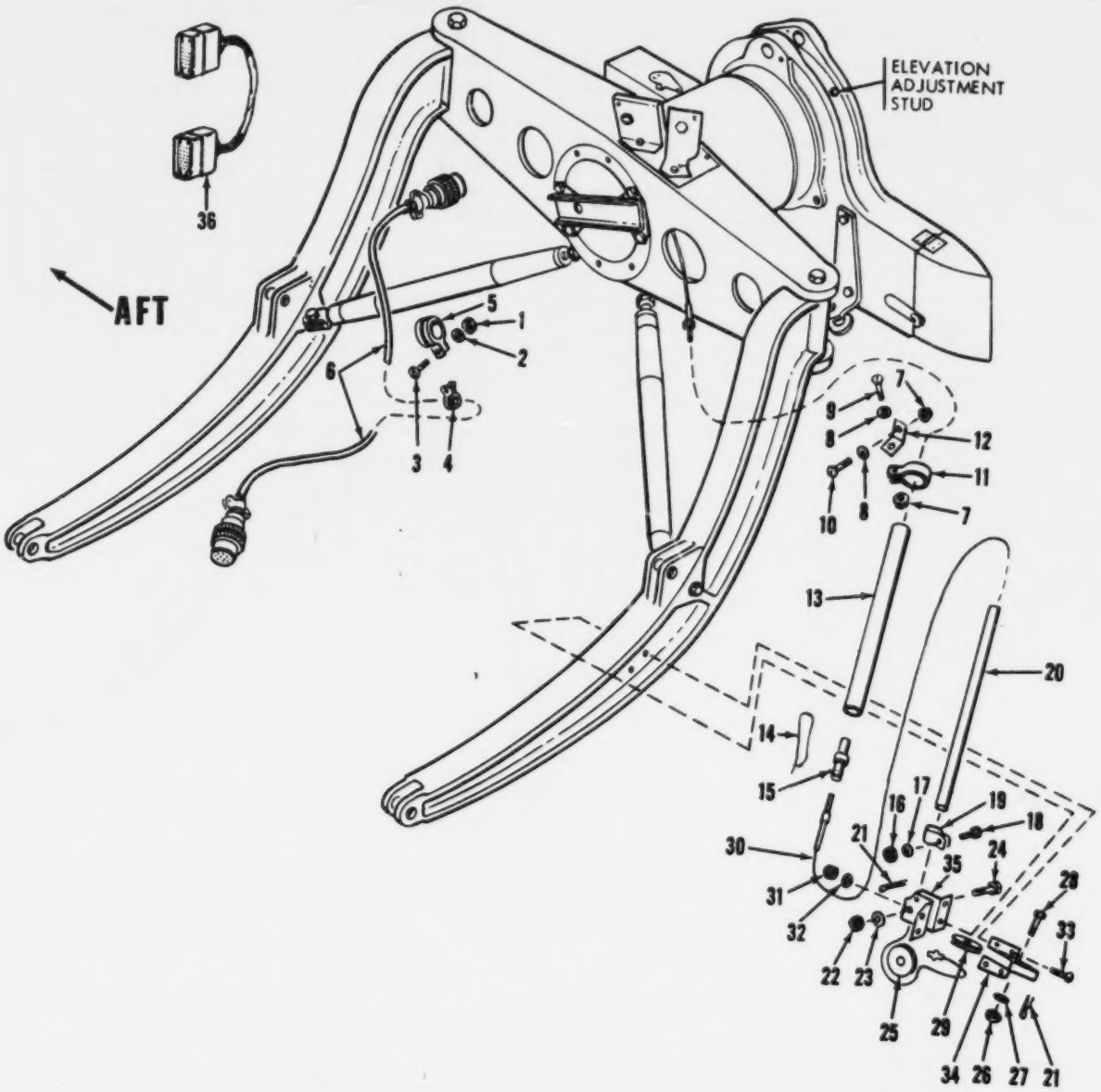
Section II. INSTALLATION AND REMOVAL OF MOUNT: XM156

2-3.1. Mount Assembly (fig. 1-1).

a. Rack-to-skin Cable Assemblies, Attaching Hardware and Inboard Components of Manual Jettison Cable Group.

(1) *Removal.* Remove cable assemblies, attaching hardware, and inboard components of manual jettison cable group in numerical sequence shown in figure 2-0.1. Disconnect special purpose cable assembly (36, fig. 2-0.1) from plugs P4021 and P4022 in helicopter aft cargo compartment.

(2) *Installation.* Install components in reverse order of numbering sequence shown in figure 2-0.1. Connect special purpose cable assembly (36, fig. 2-0.1) to plugs P4021 and P4022 in helicopter aft cargo compartment.



1. Nut
2. Washer
3. Screw
4. Clamp
5. Clamp
6. Cable assembly
7. Nut
8. Washer
9. Screw
10. Screw
11. Clamp
12. Clip
13. Guard
14. Wire
15. Turnbuckle body
16. Nut
17. Washer
18. Screw
19. Clamp
20. Guard
21. Pin
22. Nut
23. Washer
24. Bolt
25. Pulley
26. Nut
27. Washer
28. Bolt
29. Pulley
30. Cable assembly
31. Nut
32. Washer
33. Screw
34. Bracket
35. Bracket
36. Cable assembly

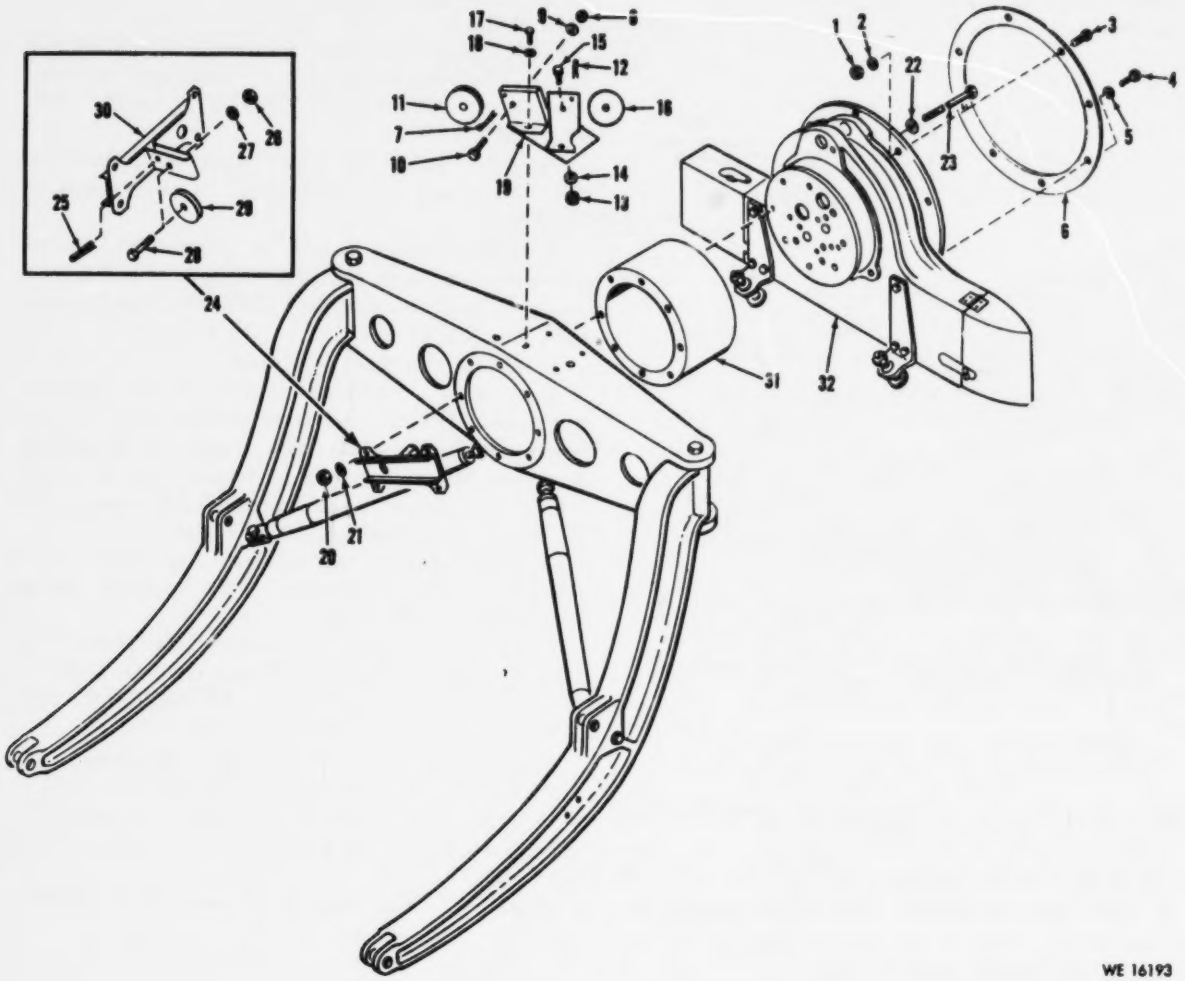
Figure 2-0.1. Removal / installation of rack-to-skin cable assemblies, attaching hardware, and inboard components of manual jettison cable group—exploded view.

b. Dust Shield, Outboard Components of Manual Jettison Cable Group, Spacer, Rack and Support Assemblies and Attaching Hardware.

(1) *Removal.* Remove dust shield, outboard components of manual jettison cable group, spacer, rack and support assemblies, and attaching hardware as shown in figures 2-0.1 and 2-0.2. Remove access door and access plate to reach helicopter portion of manual release jettison cable.

(2) *Installation.* Install components in reverse order of the numbering sequence shown in figures 2-0.1 and 2-0.2. Install rack and support assemblies on external stores support assemblies. Connect inboard end of lower cable assembly to quick disconnect on outboard end of helicopter portion of cable. Install bolt, washer and nut in pulley bracket assemblies to secure cable in pulley. Reinstall access plate and access door over openings in body of helicopter.

Caution: Use only authorized rack and support assemblies on the mount XM156. The authorized rack and support assembly may be identified by the hexagon end machined on the visible end of the elevation adjustment stud (fig. 2-0.1). Rack and support assemblies for other subsystems have an elevation adjustment stud with a pinned nut on the visible end. These rack and support assemblies are otherwise identical in appearance to the rack and support assemblies for the mount XM156 but are not to be substituted because they are not designed to support the stores weight required for the mount XM156.



1. Nut
2. Washer
3. Bolt
4. Bolt
5. Washer
6. Shield
7. Pin
8. Nut
9. Washer
10. Bolt
11. Pulley
12. Pin
13. Nut
14. Washer
15. Bolt
16. Pulley
17. Screw
18. Washer
19. Bracket assembly
20. Nut
21. Washer
22. Washer
23. Bolt
24. Bracket
25. Pin
26. Nut
27. Washer
28. Bolt
29. Pulley
30. Bracket assembly
31. Spacer
32. Rock and support assembly (left hand shown)

Figure 2-0.2. Removal / installation of dust shield, outboard components of manual jettison cable group, spacer, rack and support assemblies, and attaching hardware—exploded view.

c. Intervalometer and Arming Panel.

(1) *Removal.* Remove intervalometer and arming panel from top, left aft side of pedestal panel as shown in figure 2-0.3. Install shorting plug in end of the aircraft cable assembly connector that mates with the intervalometer. Install blank panels on pedestal panel.

(2) *Installation.* Remove and retain black panels from top, left aft side of pedestal panel. Install arming panel and intervalometer as shown in figure 2-0.3. Remove shorting plug from end of connector on the aircraft cable assembly that mates with the intervalometer. Connect the electrical connectors of the aircraft cable assemblies to mating electrical receptacles on the intervalometer and aiming panel. Lock intervalometer and arming panel in place by using a flat tip screw driver to turn the turnlock fasteners.

Caution: Observe the arrow on the RKT PAIR SELECTOR switch. Set switch to

"O" position before locking the arming panel into the pedestal panel of the aircraft.

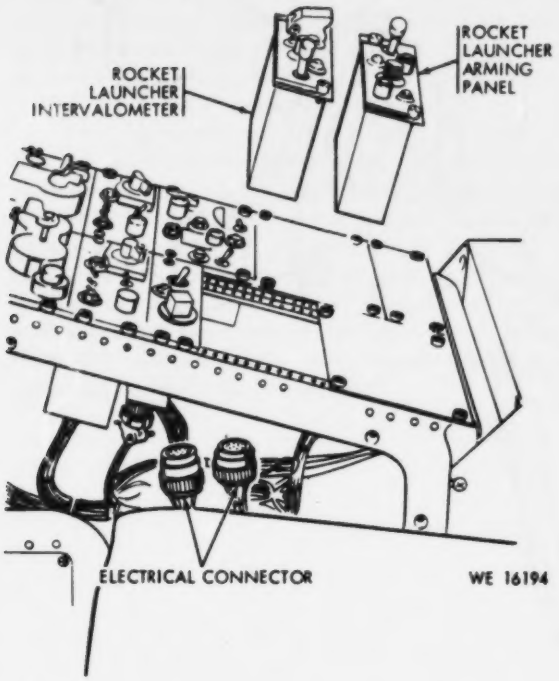


Figure 2-0.3 Removal / installation of intervalometer and arming panel.

2-3.2 Reflex Sight Mount.

For removal / installation, refer to paragraphs 3-11 and 3-15.

2-3.3. Reflex Sight X60 Series.

For removal / installation, refer to pargraphs 3-11 and 3-15.

2-3.4. Decal Bracket Assembly.

For removal / installation, refer to paragraphs 3-11 and 3-15.

Page 2-1, the heading "Section II. CONTROLS AND INSTRUMENTS" is changed to read "Section III. CONTROLS AND INSTRUMENTS".

Page 2-1, Table 2-2. The "function" column for the "armament selector switch" is superseded as follows:

A three-position switch to control and direct firing current for three different types of armament, however, only two positions are used in conjunction with the XM156.

a. Down Position. Not used.

b. Center Position. Cyclic stick trigger depressed, 190 m / sec later rockets fire. No M5 firing capability while stick trigger is depressed, however, M5 system can be flexed with flex sight while stick trigger is not depressed. M5 system can be flexed and fired by the flex sight.

c. Up Position. M5 system functions as a complete M5 subsystem. No rocket firing capability in this mode.

Page 2-5. The heading "Section III. OPERATION UNDER USUAL CONDITIONS" is changed to read, "Section IV. OPERATION UNDER USUAL CONDITIONS".

Page 2-5. The heading "Section IV. OPERATION UNDER UNUSUAL CONDITIONS" is changed to read, "Section V. OPERATION UNDER UNUSUAL CONDITIONS".

Page 2-6. Add Sections VI and VII as follows:

Section VI. BORESIGHTING

2-17. General.

a. This section contains the procedure required to adjust the axis of the bore of the weapons in relation to the aircraft sighting equipment to obtain accuracy of fire.

b. The mount XM156 is used in conjunction with 2.75 MM rocket launchers. These launchers are covered in TM 9-1440-200-14.

2-18. Boresighting Procedures.

Warning: Do not attempt boresighting with rockets loaded in rocket launchers. Unload all rockets before proceeding.

a. Adjust the rack end support assembly, using the following procedures.

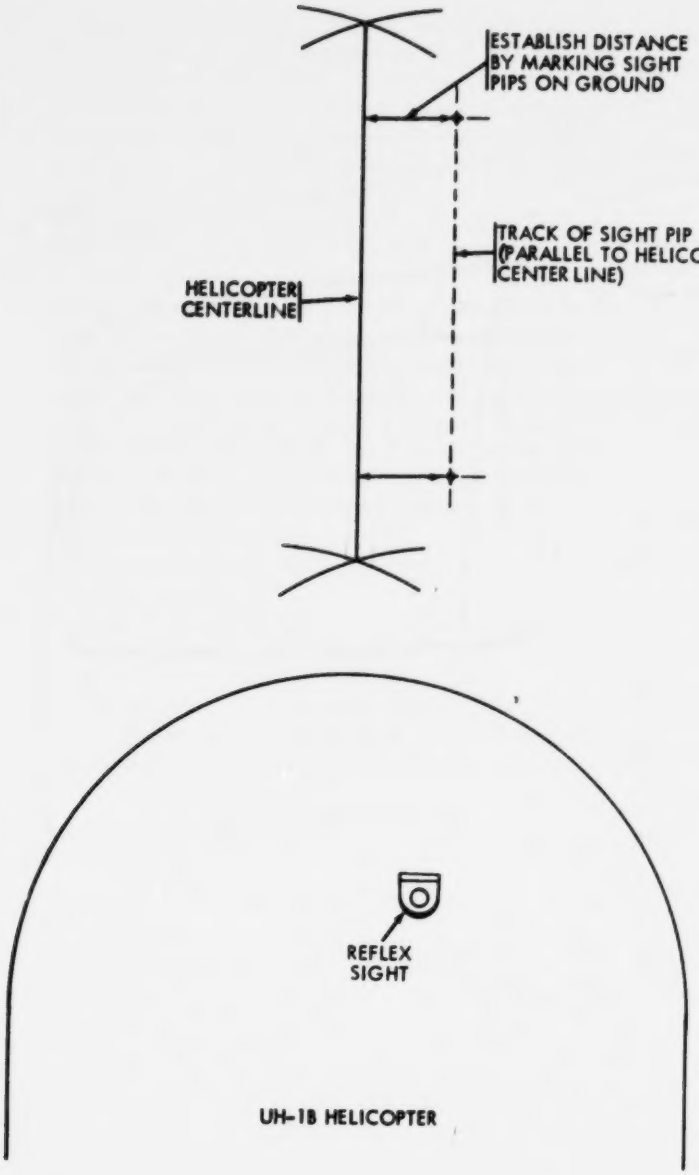
(1) Use protractor of combination square to determine fore-aft altitude of aircraft floor.

(2) To the protractor setting obtained above, add 6 degrees of elevation to forward attitude of the aircraft floor.

(3) Place protractor on top of the rear portion of rocket launcher, keeping it in the same relative position as used on floor of the aircraft.

(4) Turn elevation adjustment on rack and support assembly (counterclockwise to elevate, clockwise to lower) until protractor bubble centers.

b. Boresight rocket launchers as shown in figure 2-4.


ESTABLISH DISTANCE BY MARKING SIGHT PIPS ON GROUND
TRACK OF SIGHT PIP (PARALLEL TO HELICOPTER CENTER LINE)
HELICOPTER CENTERLINE
REFLEX SIGHT
UH-1B HELICOPTER

CAUTION

DO NOT LOOSEN LAUNCHER HANGER SUSPENSION LUGS WHEN BORESIGHTING.

1. LOOSEN CLAMPING SCREW OF REFLEX SIGHT AND ALINE SIGHT APPROXIMATELY PARALLEL TO CENTERLINE OF HELICOPTER.
2. ADJUST SIGHT IN SUPPORT UNTIL LEVEL VIAL AND INCLINOMETER SHOW SIGHT IS LEVEL.
3. TURN ON RETICLE LAMP AND ADJUST SIGHT IN AZIMUTH UNTIL SIGHT PIP WILL TRACK A LINE PARALLEL TO HELICOPTER CENTER LINE WHEN BEAM SPLITTER IS ROTATED THROUGH FULL TRAVEL.
4. TIGHTEN CLAMPING SCREW OF SIGHT.
5. SET BEAMSPLITTER AT APPROXIMATELY 105 MILS ELEVATION. JACK AND REPOSITION HELICOPTER AS NECESSARY TO PUT SIGHT PIP ON DISTANT AIMING POINT.
6. LOOSEN LEFT ROCKET LAUNCHER SWAY BRACES. INSTALL OPTICAL BORE SIGHT IN CENTER TUBE OF LAUNCHER.
7. ADJUST BORESIGHT ALINING SCREWS (6, FIG. 3-5) UNTIL BORESIGHT IS ON DISTANT AIMING POINT. TIGHTEN SWAY BRACES FLUSH WITH LAUNCHER HARD POINTS, TIGHTEN ANOTHER QUARTER TURN, AND LOCK.
8. REPEAT STEPS 6 AND 7 FOR ROCKET LAUNCHER ON RIGHT HAND SIDE OF HELICOPTER.
9. LOOSEN BORESIGHT ALINING SCREWS 1/4 TURN.

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Figure 2-4. Boresighting procedures for rocket launchers.

Section VI. OPERATIONAL CHECKS

2-19. General

a. The instructions furnished in this section are to determine if the mount is properly installed and serviceable.

b. Other information concerning the use of rocket launchers with this mount can be found in TM 9-1440-200-14.

2-20. Voltage Tests.

a. Stray Voltage Tests.

Note: Be sure that all electrical connectors are secure and that power is removed from the launchers.

(1) Set multimeter to 2.5 VDC range.

(2) Touch one lead of multimeter to an unpainted spot on the aircraft structure. Touch the second lead to the rocket firing contact of each tube in sequence.

(3) If a voltage reading is obtained when testing any tube, do not load the rocket launcher. Notify the aircraft maintenance personnel to check the helicopter for the source of the stray voltage.

b. Firing Voltage Test. The firing voltage test is performed to insure proper launcher operation and to isolate any tube malfunction.

(1) Set the OFF-SAFE-ARMED switch to SAFE.

(2) Set the intervalometer ROCKET / GUNS switch to 2.75

(3) Set RKT PAIR SWITCH to 1.

(4) Energize the firing system.

(5) Depress the intervalometer RKT RESET switch and be sure that the rack firing switch is in the reset position.

(6) Place OFF-SAFE-ARMED switch in ARMED position.

(7) Set the multimeter to 10 milliamp scale.

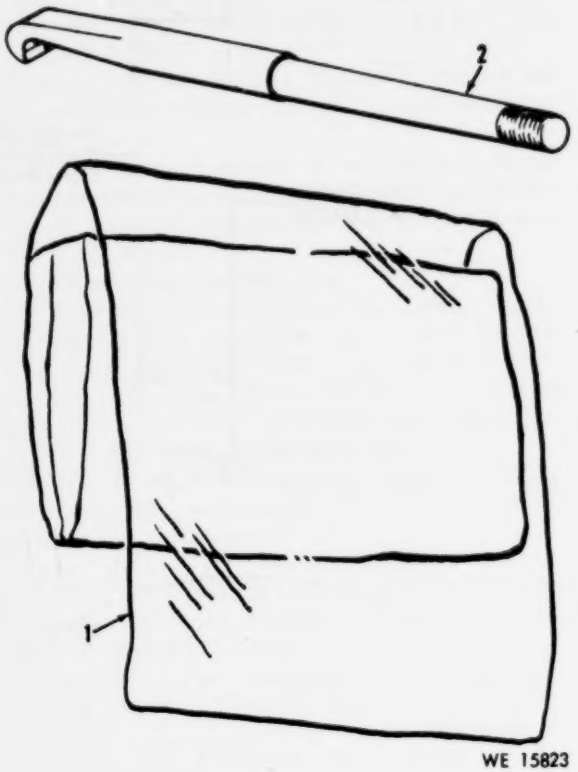
(8) Place the negative lead on an unpainted metal surface of the helicopter. Place the positive lead to the rocket firing contact or igniter head of the tube assembly number 1, and depress the firing switch (trigger) on the cyclic stick. The meter needle should deflect, indicating a pulse of firing current.

Page 3-1, paragraph 3-1 is superseded as folows:

3-1. Tools and Equipment.

Refer to table 3-1 for a list of authorized tools and equipment, Table 3-1. In lines 1 and 2, reference column, change "B-2" to "3-0.1".

After table 3-1, add figure 3-0.1.



1. Envelope
2. Hook

Figure 3-0.1. Tools and equipment.

Page 3-4, Table 3-2, line 6, sequence numbers 3.5, 7.5 and 9.5 are changed to read 3.6, 7.6 and 9.6 respectively. The "Item and procedure" column for that sequence is superseded as follows: Electrical check—Set the OFF-SAFE-ARMED switch to ARMED position, RKT PAIR SELECTOR switch to position 7 for 7 tube launchers or position 19 for 19 tube launchers. Set ROCKETS REMAINING switch to position 7 for 7 tube launchers or position 19 for 19 tube launchers. Set rack stepper to reset. Press pilot or co-pilot firing switch (on cyclic stick) and check that ROCKETS REMAINING switch "steps" properly. Have observer verify that rack stepper switch on each rack "steps" properly. Move OFF-SAFE-ARMED switch to SAFE. Press RKT RESET switch, have observer verify that rack stepper switches move to reset position. Move OFF-SAFE-ARMED switch to OFF.

Page 3-4, Table 3-2. Sequence number 9.6 is changed to read 9.7.

Page 3-9, paragraph 3-8 *c*. In line 9, the words "or pilot's seat" will be added after "co-pilot's seat".

Paragraph 3-11 *d* is superseded as follows:

d. Reflex Sight XM60 Series. Remove items (9), (10), and (11) of figure 3-8 and remove sight.

Paragraph 3-12 is superseded as follows:

3-12. Disassembly.

a. Mount Assembly. Disassemble in order of removal as shown in figures 2-0.1, 2-0.2 and 2-0.3.

b. Left Hand and Right Hand Rack and Support Assemblies. Refer to figure 3-5.

c. Intervalometer. Refer to figure 3-6.

d. Arming Panel. Refer to figure 3-7.

e. Reflex Sight XM60 Series.

Caution: For lamp replacement, make certain circuit breaker is open, lamp switch is set to off position, and old lamp has cooled.

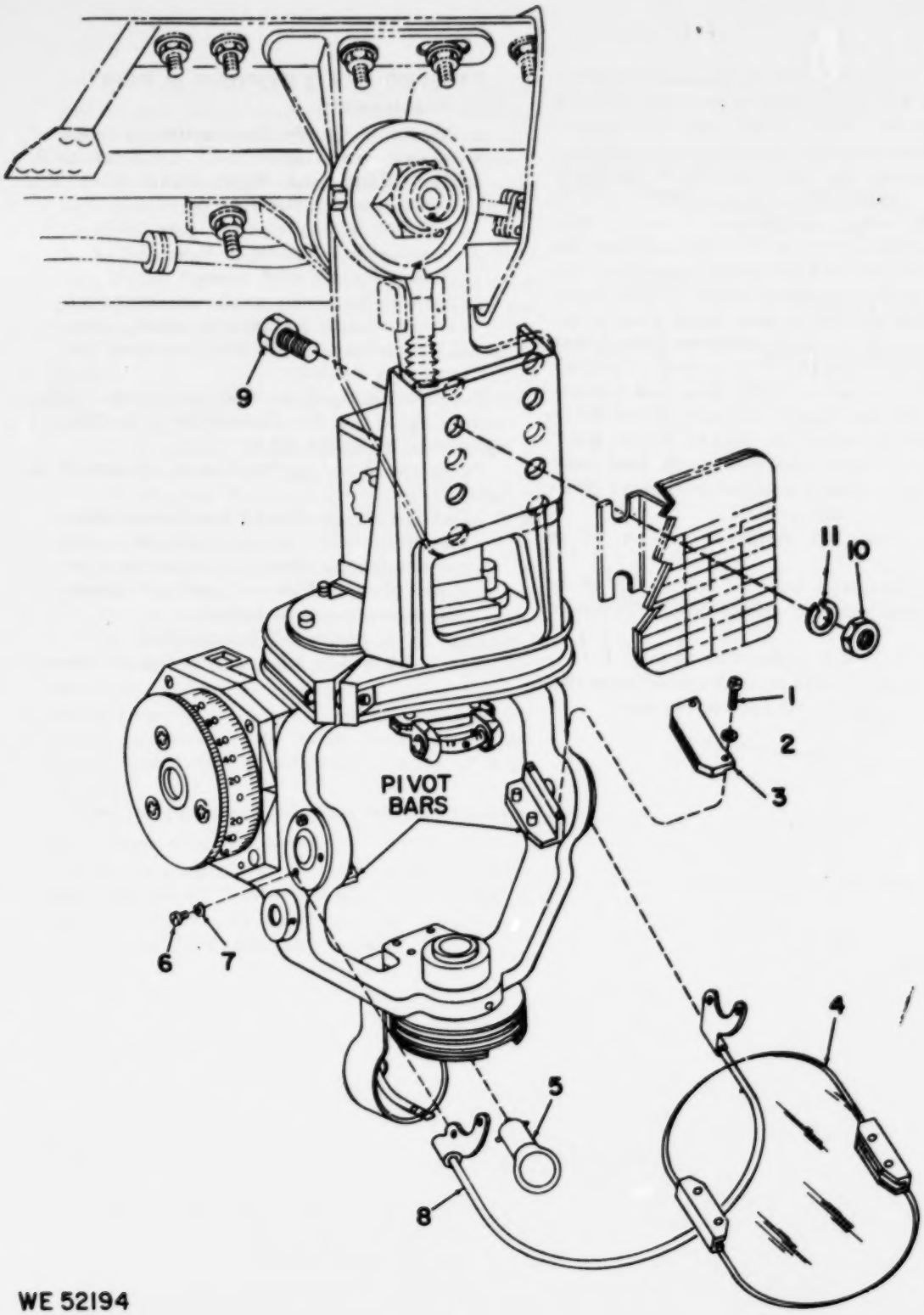
For disassembly of the M60 or XM60E1 sight, refer to figure 3-8. For disassembly of the M60A1 sight, refer to figure 3-8.1.

Paragraph 3-15, caution note is superseded as follows:

Caution: Open circuit breakers before installing any mount XM156 component. Do not close circuit breakers or apply electrical power until all mount components are installed.

Page 3-10, Figure 3-4 is rescinded.

Page 3-14, Figure 3-8 is superseded as follows:



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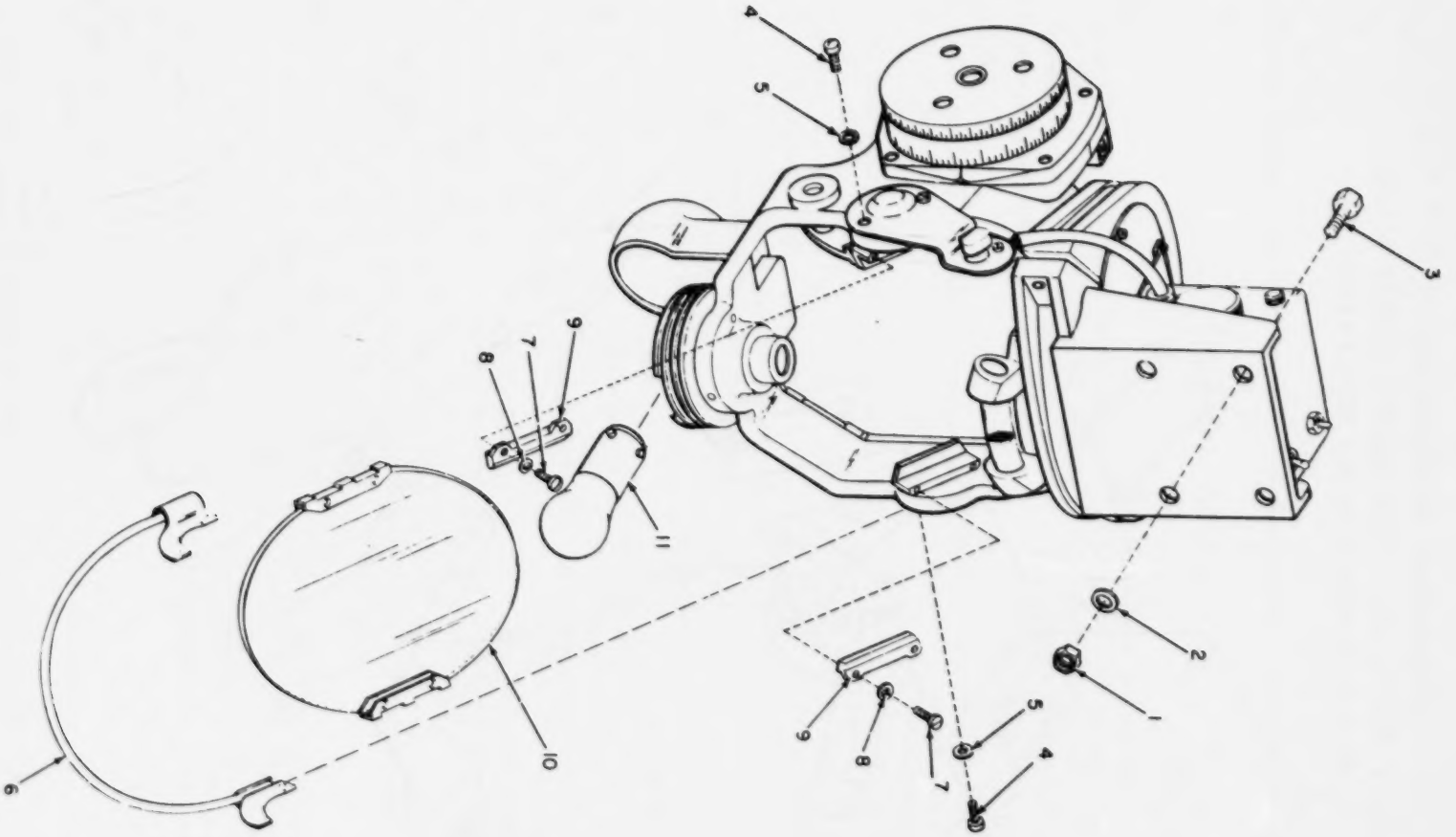
1. Screw
2. Washer
3. Retainer
4. Beam Splitter
5. Lamp
6. Screw
7. Washer
8. Shield
9. Bolt
10. Nut
11. Washer

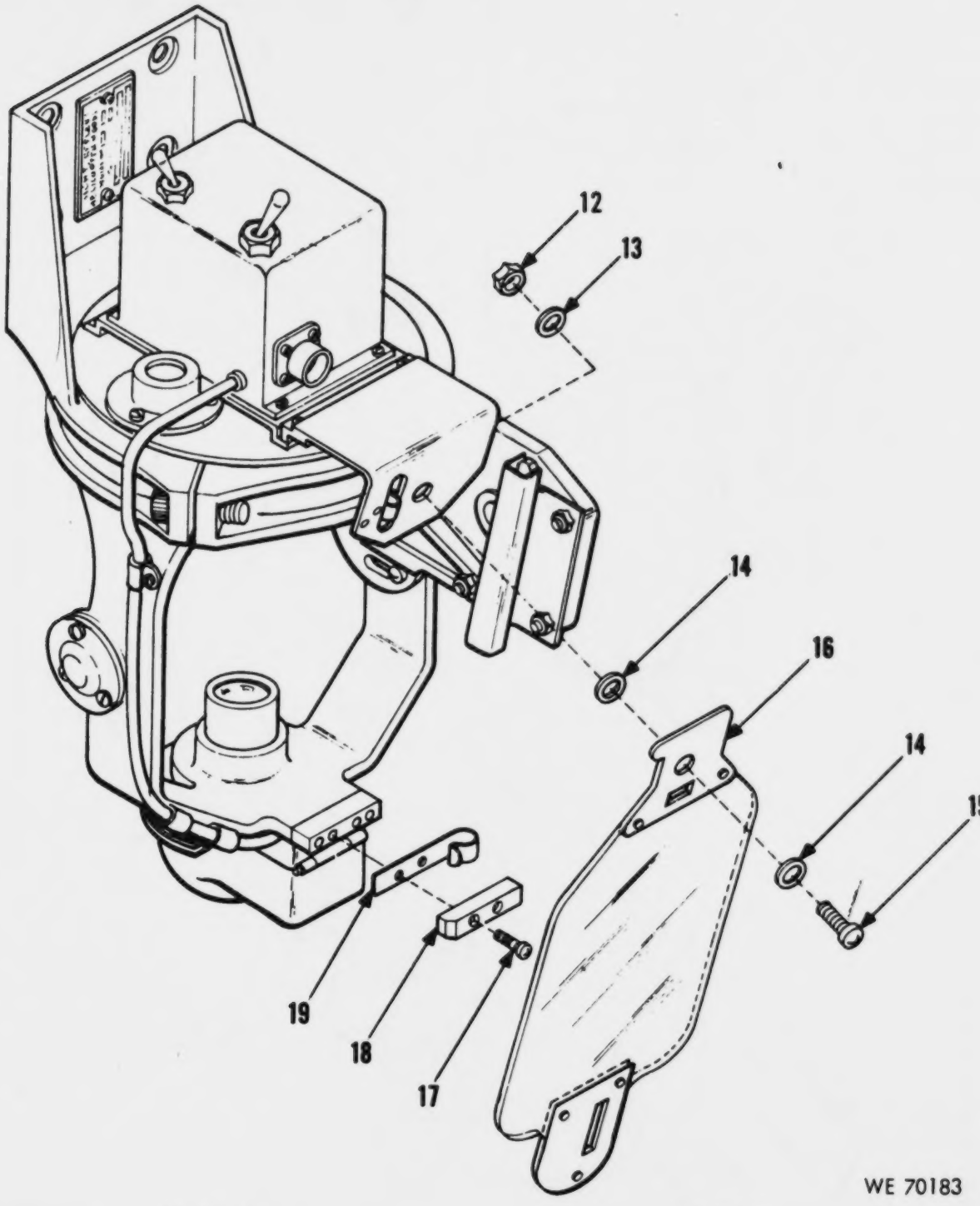
Figure 3-8. Reflex sight M60 or XM60E1—partially exploded view.

Figure 3-8.1 is added as follows:



1. Nut
2. Washer
3. Bolt
4. Screw
5. Washer
6. Shield
7. Screw
8. Washer
9. Retainer
10. Beam Splitter
11. Lamp

Figure 3-8.1. Reflex sight M60A1—partially exploded view (sheet 1 of 2).



12. Nut
13. Washer
14. Washer
15. Screw
16. Filter
17. Screw
18. Support
19. Spring

Figure 3-8.1. Reflex sight M60A1—partially exploded view (sheet 2 of 2).

Page 4-1. Chapter 4 is rescinded.

Page B1. Appendix B is superseded as follows:

APPENDIX B (superseded)
BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST

Section I. INTRODUCTION

1. Scope.

This appendix lists basic issue items and items troop installed or authorized required by the crew / operator for operation and maintenance of the helicopter multiarmament mount XM156.

2. General.

This basic issue items, and items troop installed or authorized list is divided into the following sections:

a. Basic Issue Items List—Section II. A list, in alphabetical sequence, of items which must be turned in with the end item.

b. Items Troop Installed or Authorized List—Section III. A list, in alphabetical sequence, of items which, at the discretion of the unit Commander, may accompany the end item, but are not subject to be turned in with the end item.

3. Explanation of Columns.

The following provides an explanation of columns found in the tabular listings:

a. Source, Maintenance, and Recoverability Codes (SMR). Not applicable.

b. Federal Stock Number. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description. Indicates the Federal item name and a minimum description required to identify the item. The last line indicates the reference number followed by the applicable Federal Supply Code for Manufacturer (FSCM) in parentheses. The FSCM is used as an element in item indentification to designate manufacturer or distributor or Government agency, etc. and is identified in SB 708-42. Items that are included in kits and sets are listed below the name of the kit or set with quantity of each item in the kit or set indicated in front of the item name.

d. Unit of Measure (U / M). Indicates the standard or basic quantity by which the listed item is used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, e.g., ea, in., pr, etc. and is the basis used to indicate quantities and allowances in subsequent columns. When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

e. Quantity Furnished With Equipment (Basic Issue Items Only). Indicates the quantity of item furnished with the equipment.

f. Quantity Authorized (Items Troop Installed or Authorized Only). Indicates the quantity of the item authorized to be used with the equipment.

g. Quantity Incorporated in Unit. Not applicable.

4. Special Information.

a. Mount, multiarmament, helicopter, XM156, with equipment, is the end item and is requisitioned for intial issue only.

b. Action change codes indicated in the left-hand margin of the listing page denote the following:

N—Indicates added item.
C—Indicates change in data.
R—Indicates change in FSN only.

c. The following publications pertain to helicopter multiarmament mount XM156 and its components:

LO 9-1090-204-12	Lubrication Order
TM 9-1090-204-20P	Organizational Maintenance Repair Parts and Special Tools List
TM 9-1090-204-35	Direct Support and General Support Maintenance Manual
TM 9-1090-204-34P	Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools)
TM 9-1090-204-ESC	Equipment Serviceability Criteria

Section II. BASIC ISSUE ITEMS LIST

Not applicable.

Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REF NO. & MFG CODE / USABLE ON CODE	(4) UNIT OF MEAS.	(5) QTY AUTH
	1090-945-9875	HOOK, COCKING, BOMB RACK 11699557 (19204)	EA	1

Page C-3, Section II is superseded as follows:

Section II. MAINTENANCE ASSIGNMENT

a Group number	b Component assembly Nomenclature	c Maintenance function: Inspect	Test	Service	Adjust	Align	Calibrate	Install	Replace	Repair	Overhaul	Rebuild	d Tools and equipment	e Remarks
1	MOUNT, MULTIARMAMENT HELICOPTER: XM156	O	O	O	..	O	..	O	O	O	D			
2	RACK AND SUPPORT ASSEMBLY, LEFT AND RIGHT HAND	O	O	O	O	..	..	O		O	D			
3	RACK, BOMB, AIRCRAFT: MA4A	O	O	..	..	..	..	O	O	F	D			
4	INTERVALOMETER, ROCKET LAUNCHER:	O	F	..	..	..	..	O	O	O	D			
5	PANEL, ARMING, ROCKET LAUNCHER:	O	F	..	..	..	..	O	O	O	D			
6	SIGHT, REFLEX: M60A1	O	..	O	..	..	..	O	O	O	D			
7	MOUNT, SIGHT, INFINITY REFLEX	O	..	..	..	..	..	O	O	O	D			

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TM 9-1090-204-12
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CHANGE
NO. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *15 April 1975*

Operator and Organizational Maintenance Manual

MOUNT, MULTIARMAMENT, HELICOPTER: XM 156 (1090-00-930-5018) (USED ON UH-1B OR UH-1C HELICOPTERS)

TM 9-1090-204-12, 10 April 1967, is changed as follows:
The title is changed as shown above.
Page 2, paragraph 2-3.1. Subparagraph (2) is superseded as follows:

(2) *Installation*

(a) Remove access door assembly to reach helicopter jettison assembly. Release jettison assembly from stowed position. (Fig 2-0.0).

(b) Install components in reverse order of numbering sequence shown in Fig 2-0.1. Connect special purpose cable assembly (36, Fig 2-0.1) to plugs P4021 and P4022 in helicopter aft cargo compartment.

(c) Refer to Figs. 2-0.0 and 2-0.01 and install the cable assemblies and associated hardware which controls the manual release lever of the bomb rack in the rack and support assembly.

NOTE

Adjust cables so that both bomb racks release simultaneously when manual jettison handle is pulled rearward approximately 3/4 of its travel. After adjustment is made, be sure to safety wire manual jettison handle with soft copper wire.

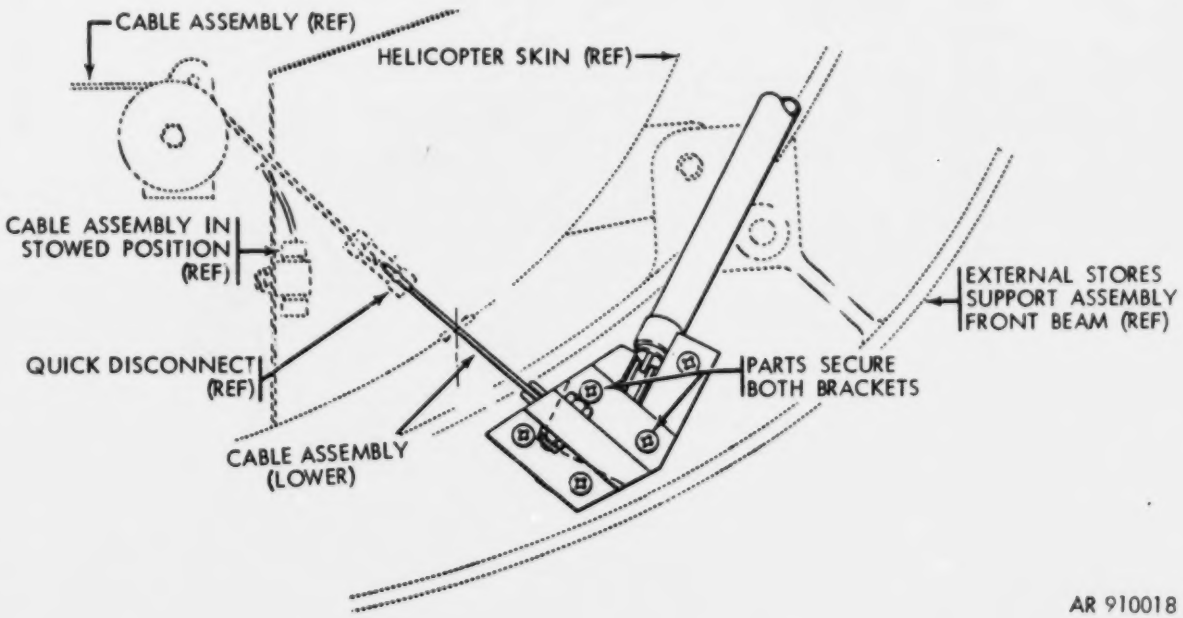

Figure 2-0.0. Installation of lower cable assembly and associated parts.

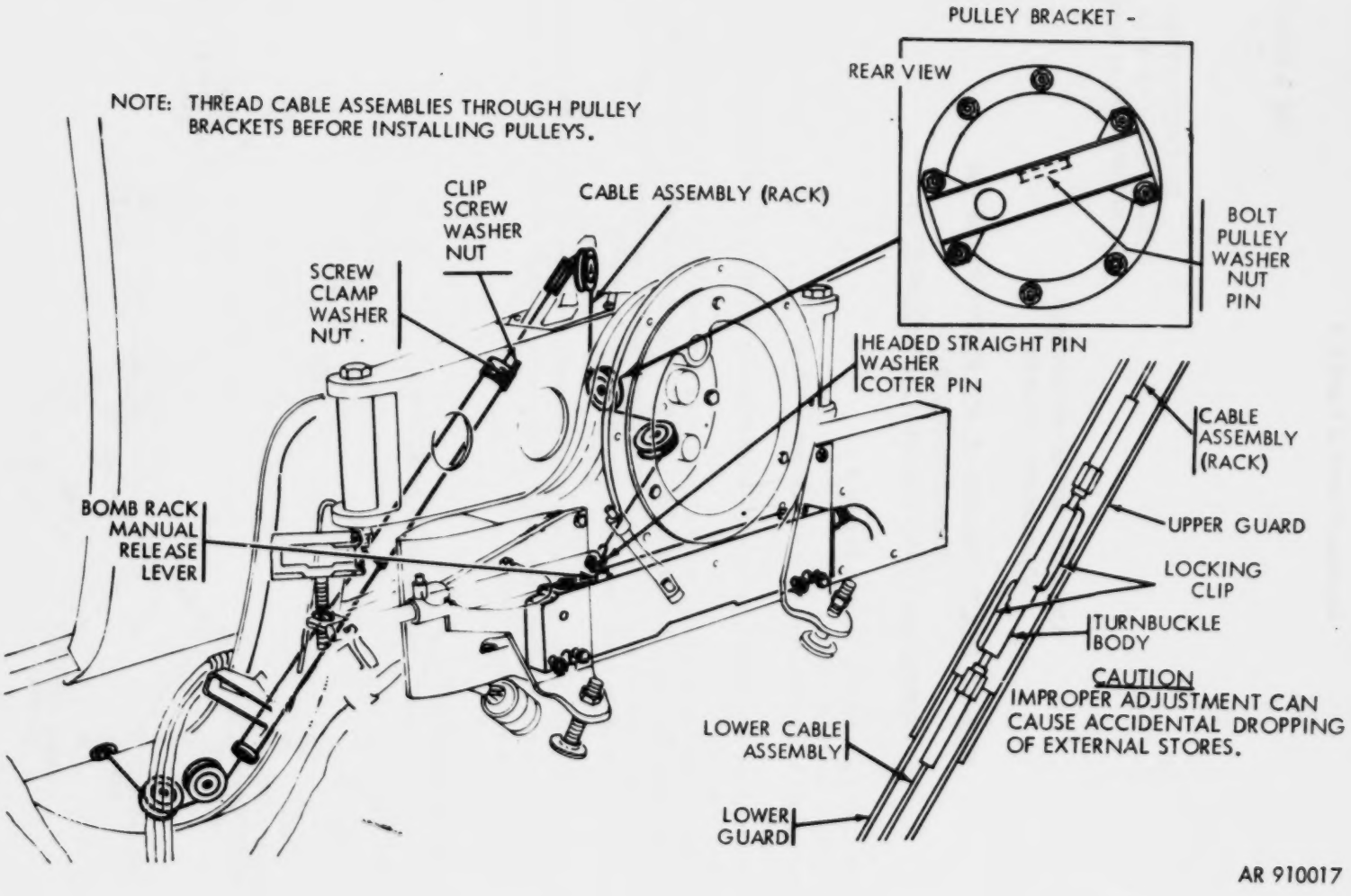

Figure 2-001. Schematic diagram of installation of manual release jettison cables.

By Order of the Secretary of the Army:

FRED C. WEYAND
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-31, (qty rqr block No. 458) Organizational maintenance requirements for Mount, Multi-Armament, Helicopter, M156.

CHANGE
NO. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC., *17 December 1975*

Aviation Unit Maintenance Manual

MOUNT, MULTIARMAMENT, HELICOPTER: XM156 (NSN 1090-00-930-5018) (USED ON UH-1B OR UH-1C HELICOPTERS)

TM 9-1090-204-12, 10 April 1967, is changed as follows:
The title is changed as shown above.
Page iii. Immediately following the title add the following:
To implement the 3-level maintenance concept, the following changes will be made to this manual, as applicable:

a. Substitute the words Aviation Unit maintenance for Crew/Operator and Organizational maintenance (first level of maintenance). Also, wherever the symbol for Crew/Operator maintenance (C) is used, change to the symbol for Aviation Unit maintenance (O).

b. Substitute the words Aviation Intermediate maintenance for Direct Support and General Support maintenance (second level of maintenance). Also, wherever the symbol for General Support maintenance (H) is used, change to the symbol for Aviation Intermediate maintenance (F).

c. The Depot level of maintenance remains the same (third level of maintenance).

d. Under the new 3-level maintenance concept, the maintenance codes are as follows: Aviation Unit Maintenance (O), Aviation Intermediate Maintenance (F), and Depot Maintenance (D).

By Order of the Secretary of the Army:

FRED C. WEYAND
General, United States Army
Chief of Staff

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To be distributed in accordance with DA Form 12-31 (qty rqr block No. 458), organizational maintenance requirements for Mount, Multi-Armament, Helicopter, M156.

SAFETY PRECAUTIONS

Heading	Text	Reference
Caution	Other subsystem rack and support assemblies are not designed to support the weight requirements of the mount XM156 and shall not be substituted.	1-3a(2)
Caution	It is imperative that the approved practices and precautions be followed. TM 9-207 contains information which is specifically applicable to the weapon materiel. It must be considered an essential part of this technical manual, not merely an explanatory supplement to it.	2-10
Caution	Perform pre-flight services before any armament item installed on mount XM156 is loaded with ammunition.	3-6a(1)
Caution	Support both rocket launchers before checking jettison circuit.	table 3-3
Caution	Make sure the OFF-SAFE-ARMED switch is OFF and that the helicopter battery is disconnected before connecting or disconnecting any mount electrical connector or before connecting or disconnecting any external power source to the helicopter.	
Caution	For lamp replacement, make certain circuit breaker is open, lamp switch is set to off position, and lamp has cooled.	3-11e
Caution	Open circuit breakers before installing any mount XM156 component. Do not connect mount XM156 to helicopter battery until all mount components are installed.	3-14
Warning	Do not attempt boresighting with rockets loaded in rocket launchers. Unload all rockets before proceeding.	4-2
Warning	Before inserting or removing 2.75-inch rockets, perform tests indicated in a below and observe instructions shown in figure 4-5.	4-3
Warning	Use only rockets which are assembled in accordance with paragraph 4-4b. Touch rocket fin retainer (shorting cap) to bare metal on launcher to drain off any static electricity when loading.	4-3b
Caution	Do not remove fin retainer from rocket until loading the launcher. Carefully store fin retainers for use when unloading rockets from launcher.	4-3b
Warning	Deformed motor tubes will be reported to ammunition personnel for disposition.	4-4b(2)(a)
Warning	Failure to torque warhead to rocket motor to required minimum 55 ft-lbs may result in loss of warhead in flight or upon firing.	4-4b(2)(c)
Caution	Do not use rockets with any of the above defects; return to ammunition personnel for disposition.	4-4b(3)(e)

TECHNICAL MANUAL
No. 9-1090-204-12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *10 April 1967*

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

MOUNT, MULTIARMAMENT, HELICOPTER: XM156

			Paragraphs	Pages
CHAPTER	1.	INTRODUCTION		
Section	I.	General	1-1, 1-2	1-1
	II.	Description and data	1-3, 1-6	1-1, 1-5
CHAPTER	2.	OPERATING INSTRUCTIONS		
Section	I.	Services upon receipt of materiel	2-1, 2-3	2-1
	II.	Controls and instruments	2-4, 2-5	2-1
	III.	Operations under usual conditions	2-6, 2-8	2-5
	IV.	Operation under unusual conditions	2-9, 2-16	2-5, 2-6
CHAPTER	3.	OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
Section	I.	Operator's tools and equipment	3-1, 3-2	3-1
	II.	Lubrication instructions	3-3, 3-4	3-1
	III.	Preventive-maintenance checks and services	3-5, 3-6	3-4
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	V.	Operator and organizational maintenance procedures	3-9, 3-15	3-9
CHAPTER	4.	MATERIEL USED IN CONJUNCTION WITH MAJOR ITEM		
Section	I.	2.75-Inch rocket launchers	4-1, 4-4	4-1, 4-7
	II.	Other armament		4-11
CHAPTER	5.	SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE		
Section	I.	Shipment and limited storage	5-1, 5-2	5-1
	II.	Demolition of materiel to prevent enemy use	5-3, 5-5	5-2
APPENDIX	A.	REFERENCES		A-1
APPENDIX	B.	BASIC ISSUE ITEMS LIST		B-1
APPENDIX	C.	MAINTENANCE ALLOCATION CHART		C-1
INDEX				I-1

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope.

a. This manual contains information necessary for operator and organizational maintenance of the helicopter multiarmament mount XM156. The multiarmament mount XM156 can be used on any UH-1B or UH-1C helicopter having the internal wiring for the armament subsystem XM16.

b. Appendix A contains a list of references directly applicable to the care and use of materiel covered in this manaul.

c. Appendix B contains the Baisc Issue Items List.

d. Appendix C contains the maintenance allocation chart for the multiarmament mount XM156, which assigns authorized maintenance functions to specific maintenance categories.

1-2. Forms and Records.

a. *General.* DA Forms and procedures will be only those prescribed in TM 38-750, Army Equipment Record Procedures

b. *Recommendations for Maintenance Manual Improvements.* Report of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to: Commanding General, U. S. Army Weapons Command, ATTN: AMSWE-SMM-P, Rock Island, Illinois 61201.

Section II. DESCRIPTION AND DATA

1-3. Description.

The helicopter multiarmament mount XM156 is a combination of items which primarily provides rocket firing capability for the UH-1B or UH-1C helicopter (fig. 1-1). The components of the multiarmament mount XM156 are the mount assembly, and the helicopter reflex sight XM60, decal bracket assembly, and reflex sight mount. Table 1-1 contains a listing of the main components and assemblies.

Table 1-1. Main Components and Assemblies of Helicopter Mount XM156

Nomenclature	Quantity per mount	Fig. No. reference
MOUNT ASSEMBLY	1	1-1
RACK AND SUPPORT ASSEMBLY, left hand	1	1-1
RACK AND SUPPORT ASSEMBLY, right hand	1	
INTERVALOMETER, ROCKET LAUNCHER:	1	1-1 and 1-2
PANEL, ARMING, ROCKET LAUNCHER:	1	1-1 and 1-3
SIGHT, REFLEX, HELICOPTER: XM60	1	1-1 and 1-4
BRACKET ASSEMBLY, DECAL:	1	1-1 and 1-4
MOUNT, SIGHT, INFINITY REFLEX:	1	1-1 and 1-5

	Paragraphs	Page
Intervalometer:		
Assembly	3-14	3-9
Cleaning, inspection, and repair	3-13	3-9
Description	1-3a	1-2
Disassembly	3-12c	3-9
Installation	3-15	3-9
Removal	3-11b	3-9
Jettison:		
Electrical (table 2-2)	2-5	2-1
(table 3-3)	3-6	3-4
Manual (table 2-2)	2-5	2-1
Limited storage instructions:		
Authorization	5-5	5-2
General	5-3	5-2
Preparation and loading of equipment for shipment	5-1	5-1
Preparation of equipment for limited storage	5-2	5-1
Lubrication:		
General instructions	3-3	3-1
In storage	5-2	5-1
Service intervals	3-4	3-1
Maintenance manual improvements, recommendations for	1-2b	1-1
Maintenance procedures:		
General	3-9	3-9
Maintenance and adjustment	3-10	3-9
Removal	3-11	3-9
Mount XM16, installation of	2-2	2-1
Mount assembly:		
Assembly	3-14	3-9
Cleaning, inspection, and repair	3-13	3-9
Description	1-3a	1-2
Disassembly	3-12a	3-9
Installation	3-15	3-9
Name, caution, and instruction plates (table 1-2)	1-5	1-4
Preventive-maintenance:		
Daily inspection (table 3-2)	3-6a	3-4
In storage	5-2	5-1
Intermediate inspection (table 3-3)	3-6a	3-4
Rack and support assemblies:		
Assembly	3-14	3-9
Cleaning, inspection, and repair	3-13	3-9
Rack and support assemblies—continued:		
Description	1-3a	1-2
Disassembly	3-12b	3-9
Installation	3-15	3-9
Range table (*See* Decal bracket assembly)		
Reflex sight XM60:		
Adjustment	4-2	4-1
Assembly	3-14	3-9
Cleaning, inspection, and repair	3-13	3-9

head visible on the elevation adjustment stud. They are mounted externally on each side of the helicopter and are capable of carrying 2.75-inch aircraft rocket launchers XM-157, XM158, and XM159 or other armament (stores), limited to 500 pounds per side, from 14-inch spaced suspension hooks.

Caution: **Other subsystem rack and support assemblies are not designed to support the weight requirements of the mount XM156 and shall not be substituted.**

(2) *Rocket launcher intervalometer (fig. 1-2).* The intervalometer controls rocket firing circuits and is interconnected electrically with the arming panel.

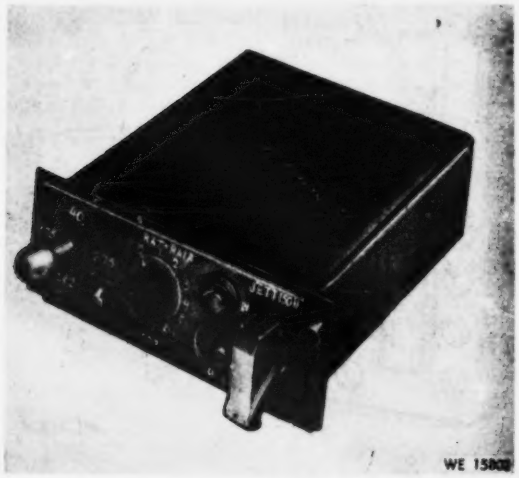


Figure 1-2. Intervalometer—right front view.

(3) *Rocket launcher arming panel (fig. 1-3).* The arming panel, which is designed for use with rocket launchers, controls the electrical power for the mount through the OFF-SAFE-ARMED switch.

b. *Reflex Sight XM60 (fig. 1-4).* The reflex sight XM60 provides a projected reticle image, enabling the pilot to fly a target-collision course by maintaining the target at the center of sight reticle pattern.

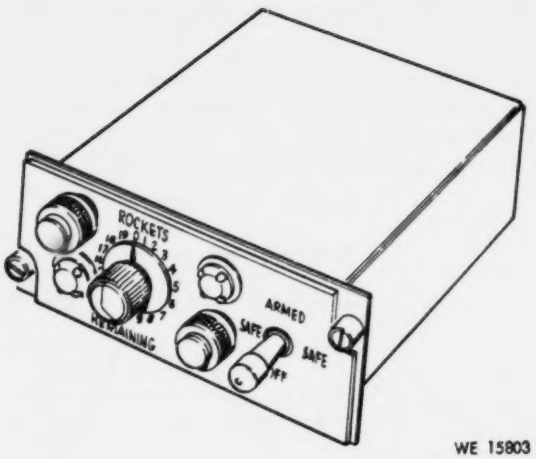


Figure 1-3. Arming panel—right front view.

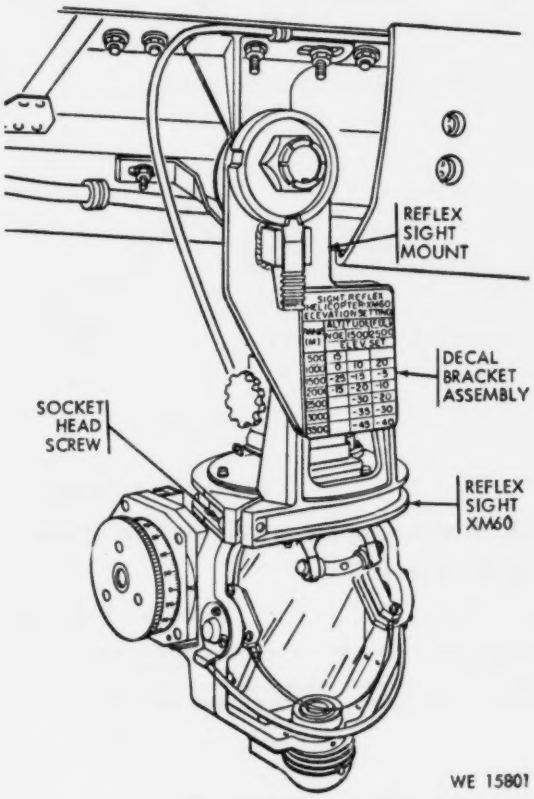


Figure 1-4. Reflex sight XM60 and decal bracket assembly installed on sight mount—left rear view.

c. *Decal Bracket Assembly (fig. 1–4).* The aiming data on the decal provides elevation settings for operation of reflex sight XM60.

d. *Infinity Reflex Sight Mount (fig. 1–5).* The reflex sight mount is attached to the top of the aircraft cabin and holds reflex sight XM60 in operating or stowed position.

1–4. Tabulated Data.

Cable assemblies	5.0 lb (approx)
Rack and support assembly elevation and depression adjustment limits	±88.9 mils (5deg)
Rack and support assembly	65.50 lb
Intervalometer	2.40 lb
Arming panel	1.35 lb
Reflex sight XM60	9.10 lb

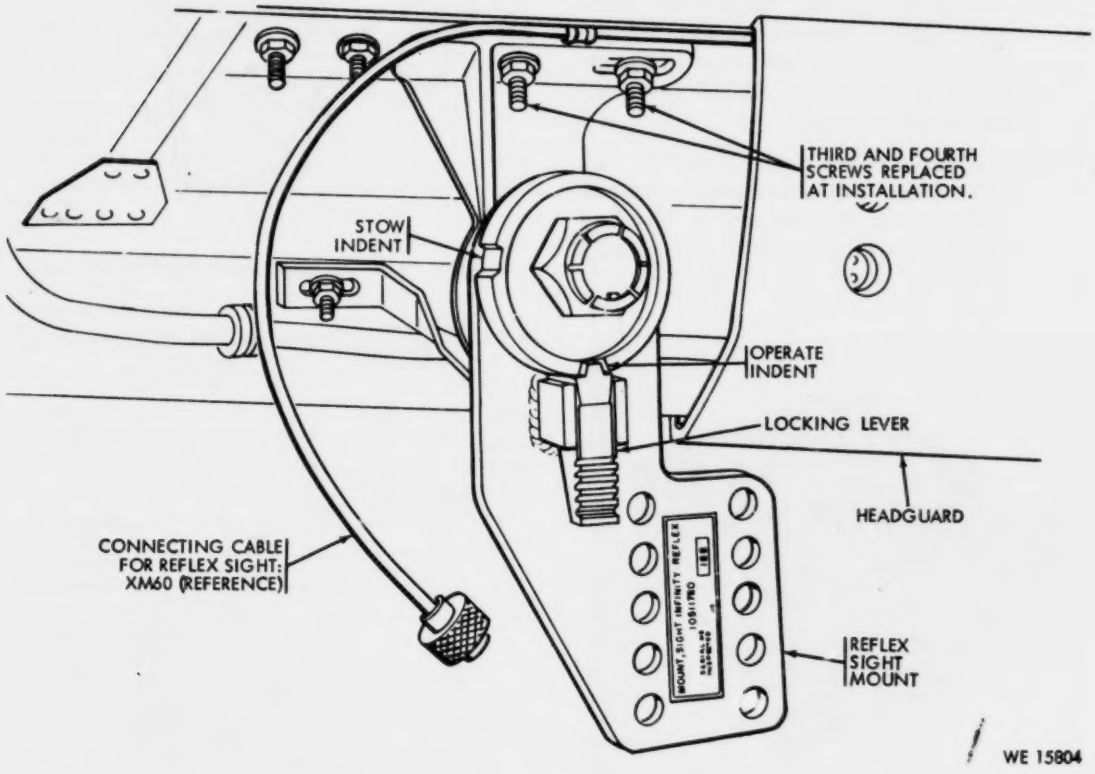


Figure 1–5 Reflex sight mount installed—left rear view.

1–5. Name, Caution, and Instruction Plates.

Refer to table 1–2.

Table 1–2. Name, Caution, and Instruction Plates

Name	Location	Function or Use	Reference
Identification plate	Aircraft bomb rack MA4A	Lists Federal stock number, type, drawing number, serial number, Military Specifications, order number, and specifications.	
Identification plate	Intervalometer	Lists Federal stock number, part number, manufacturer, date of manufacture, contract number, and serial number.	

Table 1-2. Name, Caution, and Instruction Plates—Continued

Name	Location	Function or Use	Reference
Identification plate	Arming panel	Lists Federal stock number, part number, manufacturer, date of manufacturer, contract number, and serial number.	
Identification plate	Reflex sight mount	Lists name, part number, serial number, and inspection date.	
Panel plate	Top of intervalometer	Identifies various switch positions on intervalometer.	
Panel plate	Top of arming panel	Identifies toggle switch positions on arming panel.	
Switch plate	Under cover on rack and support rear fairing assembly	Identifies positions of rack firing switch.	
Caution (stencil)	Rack and support rear fairing assembly	Outlines process to follow before loading rockets.	
Aiming data decal	Decal bracket assembly	Gives elevation settings for various firing range and altitude positions.	

1-6. Difference in Models.

At present, there is only one model of the helicopter multiarmament mount XM156.

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. SERVICES UPON RECEIPT OF MATERIEL

2-1. Inspecting and Servicing the Equipment.

Refer to tables 2-1 and 3-2 for the necessary steps and actions taken to process and prepare materiel for operation.

Table 2-1. Service Upon Receipt of Materiel

Item	Checks and procedures	Reference
Mount XM156, tools, and equipment	Check for missing items.	Appendix B
All components	Clean.	Para 3-11
Unpainted surfaces	Check.	TM 9-213
Camouflage value	Check.	FM 5-20
Lubrication	Check; lubricate as required.	Para 3-3
All components	Install.	Para 2-2
Reflex sight XM60 and rack and support assemblies.	Boresight.	Para 4-2
All components	Make checks in table 3-2.	Para 3-4

2-2. Installation Instructions.

Note. Before installing components of mount XM156, make sure aircraft has been modified to accept mount components.

Initial installation of the mount XM156 is authorized to direct support maintenance.

2-3. Equipment Conversion.

The ammunition clamp assembly and its supporting arm and bracket assemblies furnished on the front of each rack and support assembly are not necessary for the operation of the mount XM156 and may be removed upon receipt of materiel and retained for future use as applicable.

Section II. CONTROLS AND INSTRUMENTS

2-4. General.

This section describes the various controls and instruments and provides the operator/crew sufficient information to insure the proper operation of the mount XM156.

2-5. Controls and Instruments

Refer to figures 2-1 through 2-3 and table 2-2 for controls and instruments of the mount XM156.

Table 2-2. Controls and Instruments

Control or instrument	Function	Reference
	ELECTRICAL CONTROLS	
	Intervalometer	
Armament selector switch	A three-position switch used to control and direct firing current for three different types of armament: machine gun, "7.62" (down position); rocket launcher, "2.75" (center position); and grenade launcher "40" (up position).	Fig. 2-1

Table 2-2. Controls and Instruments—Continued

Control or Instrument	Function	Reference
Rocket pair selector switch	An eight-position (0, and 1 through 7) switch used to pre-select the number of pairs of 2.75 inch rockets to be fired when a rocket launcher is used with the mount. This switch is positioned before firing switch is pressed.*	Fig. 2-1
Rocket circuit reset switch	A push button switch used to reset rocket firing circuitry. With OFF-SAFE-ARMED switch in SAFE position, the reset switch is pressed, which automatically resets interconnected firing switches located in the rack and support assemblies.	Fig. 2-1
Launcher jettison switch	A two-position toggle switch used to electrically jettison the rocket launchers. When switch guard is lifted and switch is moved to ON (forward) position, solenoids in bomb rack MA4A simultaneously release front and rear rack hooks to jettison the launchers.	Fig. 2-1
	ELECTRICAL CONTROLS	
	Arming Panel	
OFF-SAFE-ARMED switch	A three-position toggle switch, which acts as a master switch for the mount and any armament carried. Switch must be pulled upward to operate. When switched to OFF (down) position, all electrical power is removed from mount; in SAFE (center) position a green light illuminates on arming panel and electrical power is supplied to the mount but rockets cannot be fired; in ARMED (forward) position, an amber light illuminates on arming panel, electrical power is supplied to the mount, and rockets may be fired by depressing firing switch.	Fig. 2-1
Rockets remaining electrical solenoid	A twenty-position (0 and 1 through 19) switch, which indicates number of rockets remaining in launchers. The indicator on this switch is manually set, at the time rockets are loaded, to indicate the number of pairs of rockets (one in each launcher) that are in the launchers. Normal setting for fully loaded XM157 or XM158 launchers is 7. Normal setting for a fully loaded XM159 launcher is 19. As the rockets are fired, the rounds remaining indicator steps counterclockwise, one position at a time for each pair of rockets, until all rockets have been fired at which time the indicator will be on zero.	Fig. 2-1
	Reflex Sight XM60	
Reticle lamp switch	A three-position toggle switch located on top of sight XM60. When moved to either ON position, reticle pattern is illuminated.	Fig. 2-2
Rheostat knob	Located on upper left side of sight XM60. Clockwise rotation of the knob increases reticle illumination intensity.	Fig. 8-2

*If firing switch is released before burst is complete, the intervalometer and other controls are not cleared of the original firing command. However, depressing the firing switch again will start another complete selected burst.

Table 2-2. Controls and Instruments—Continued

Control or Instrument	Function	Reference
	ELECTRICAL CONTROLS—Continued	
	Cyclic Stick	
Firing switch	When depressed, with OFF-SAFE-ARMED switch in ARMED position, firing switch fires the type of armament selected on armament selector switch.	Fig. 2-3
	MECHANICAL CONTROLS	
Elevation/depression knob (sight XM60)	Centrally located on left side of sight XM60. Clockwise rotation of knob (white graduations and numerals) elevates reticle image; counterclockwise rotation of knob (red graduations and numerals) depresses reticle image. As knob is rotated, a click is audible as each graduation mark passes index mark. To bypass individual graduation marks, press in when rotating knob.	Fig. 2-2
Manual jettison handle (helicopter cabin)	Used only if launcher jettison switch does not electrically jettison launchers. The manual jettison handle is safety-wired in the forward position to prevent accidental jettisoning of launchers. To manually jettison rocket launchers, handle is pulled sharply to the rear.	Fig. 2-1

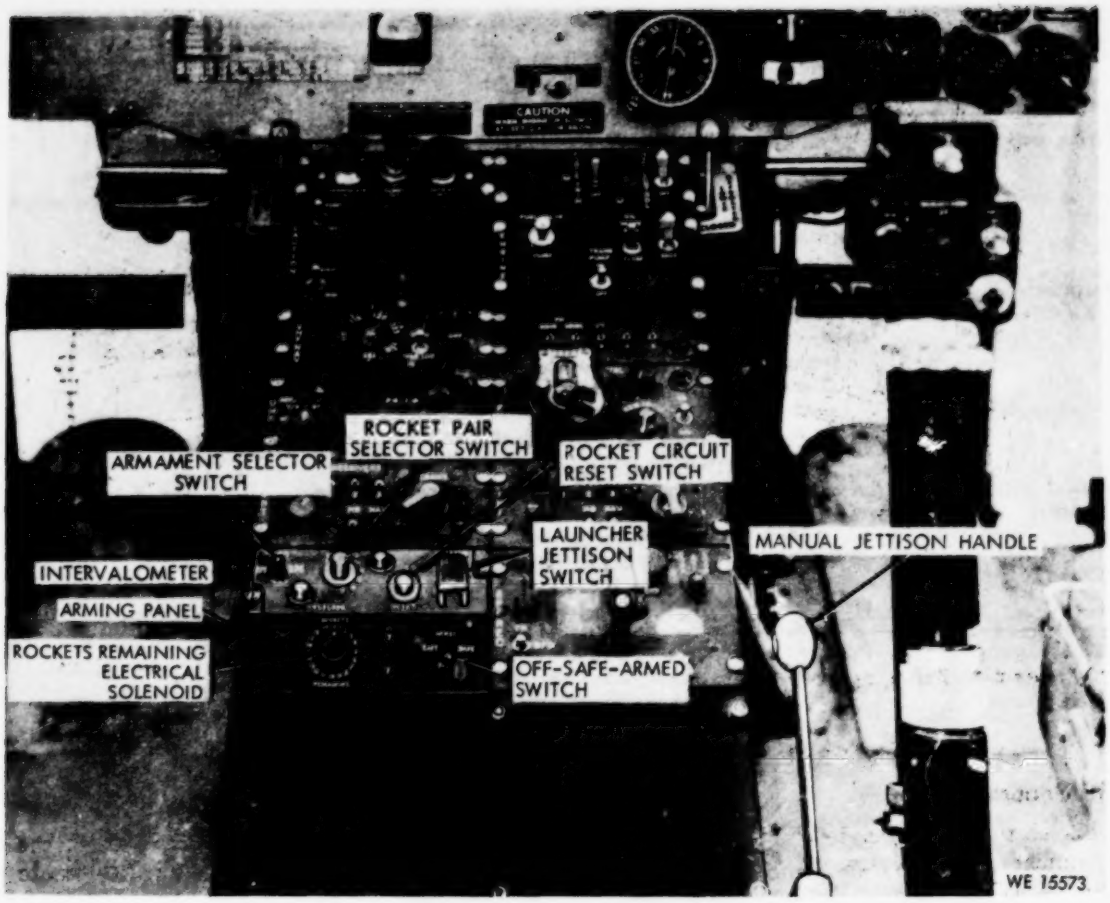


Figure 2-1. Intervalometer, arming panel, and manual jettison handle—controls.

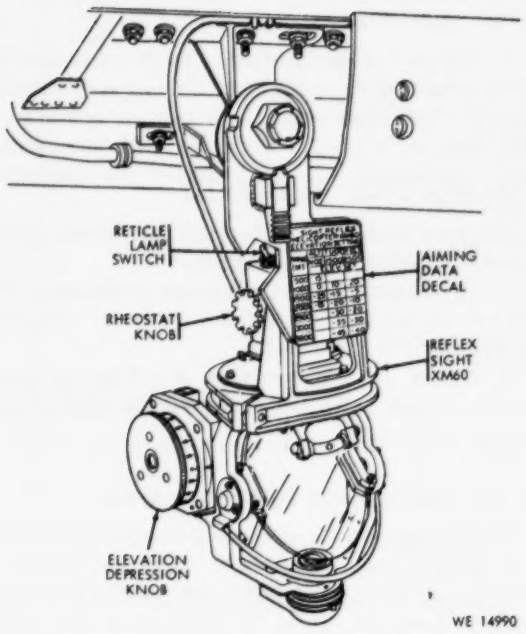


Figure 2-2. Reflex sight XM60—controls.

Figure 2-3. Cyclic stick firing switch—controls.

Section III. OPERATION UNDER USUAL CONDITIONS

2-6. General.

This section contains instructions for the mechanical steps necessary to operate the mount XM156 under conditions of moderate temperatures and humidity. Instructions for operation under unusual conditions are given in paragraphs 2-9 through 2-16.

2-7. Preliminary Service.

The instructions outlined in chapter 4 for boresighting and loading launchers should be followed carefully prior to operation of equipment. Pre-flight preventive-maintenance checks in tables 3-2 and 3-3 should be made.

2-8. Preparation for Firing.

When the mount XM156 is to be used, the sight should be moved from stow to operate position, reticle lamp switched on, and position of reticle and intensity of illumination adjusted. For rocket firing, move arming panel switch from OFF to SAFE, set intervalometer armament selector switch to 2.75, rocket pair selector to desired burst, move arming panel switch to ARMED, and press firing switch on cyclic stick. Post flight and unloading instructions given in preventive-maintenance tables and chapter 4 should be observed following mission.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-9. General.

This section contains special instructions, in addition to the normal operating procedures described in paragraphs 2-6 through 2-8, for operating and servicing the equipment under unusual conditions.

2-10. Operation in Extreme Cold.

Refer to FM 31-70, FM 31-71, and TM 9-207. Care should be taken to prevent condensation from freezing on optical surfaces in sight XM60.

Caution: **It is imperative that the approved practices and precautions be followed. TM 9-207 contains information which is specifically applicable to the weapon materiel. It must be considered an essential part of this technical manual, not merely an explanatory supplement to it.**

2-11. Operation in Extreme Heat.

a. More frequent inspections, paying particular attention to hidden surfaces and like places where corrosion might occur, should be made to assure that film of oil necessary for operation and preservation is maintained.

b. Metal items after being manually handled should be cleaned, dried, and have oil film restored.

c. Ammunition should be protected from sources of high temperatures including the direct rays of the sun.

d. White phosphorous loaded smoke rockets should be stored below 105 degrees F. If stored at higher temperatures, they should be stacked with the warhead pointing up.

e. The sight should be shielded as much as possible from direct rays of the sun.

2-12. Operation in Dusty or Sandy Areas.

Inspect and lubricate more often when operating in dusty or sandy areas. Exercise care to keep sand out of mechanisms. Shield parts from flying sand during disassembly and assembly operations.

2-13. Operation in Rainy or Humid Conditions.

a. Inspect and lubricate more frequently than usual when operating in rainy and humid conditions. When exposed to rain or condensation occurs, wipe dry and coat with preservative lubricating oil as required to prevent oxidation.

b. Keep ammunition dry and free from mud, corrosion, or any foreign matter.

c. Inspect electrical equipment frequently to detect insulation breakdown due to fungus growth.

d. Check optical surfaces for fungus and notify direct support maintenance personnel of any indications.

2-14. Operation in Salt Water Areas.

Mosit and salty atmospheres tend to emulsify oils and greases and destory their rust-preventive qualities. Inspect parts frequently for corrosion. Keep all traces of salt water and salt deposits removed. Keep covers in place as much of the time as firing conditions permit.

2-15. Operation in High Altitudes.

Care should be taken to prevent condensation and icing conditions.

2-16. Operation Below Sea Level.

For operations below sea level, refer to paragraphs 2-10 through 2-14 above.

CHAPTER 3

OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S TOOLS AND EQUIPMENT

3-1. Tools and Equipment.

Refer to table 3-1, and basic issue items list, Appendix B, for a list of authorized tools and equipment.

Table 3-1. Tools and Equipment

Item	Identifying number	Reference Fig.	Reference Para	Function
ENVELOPE, TRANSPARENT:	7510-763-5996	B-2		Used to stow equipment log book.
HOOK, COCKING, BOMB RACK:	1090-945-9875	B-2		Used to cock aircraft bomb rack MA4A.

3-2. Organizational Maintenance Repair Parts.

Refer to TM 9-1090-204-20P for a list of repair parts authorized for use at organizational level.

Section II. LUBRICATION INSTRUCTIONS

3-3. General.

Detailed lubrication instructions for this equipment are contained in LO 9-1090-204-12 and are reproduced in figure 3-1.

3-4. Service Intervals.

Service intervals prescribed by LO 9-1090-204-12 are the minimum for usual operating conditions.

LUBRICATION ORDER LO 9-1090-204-12

MOUNT, MULTIARMAMENT, HELICOPTER: XM156

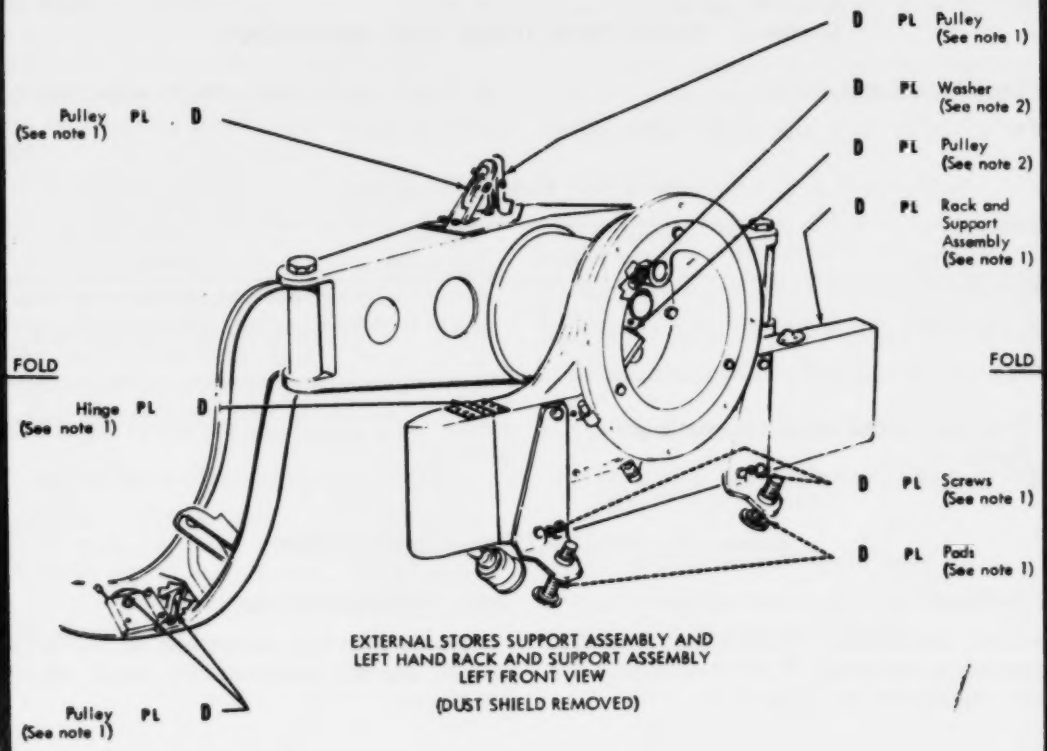
Reference: TM 9-1090-204-12

Intervals are based on normal hours of operations. Reduce intervals to compensate for abnormal operations and severe conditions or contaminated lubricants. During inactive periods, sufficient lubrication must be performed for adequate preservation.

Clean parts, other than powder- or rocket-residue-fouled, with THINNER, PAINT, MINERAL SPIRITS (TPM), or DRY CLEANING SOLVENT (SD). Dry before lubricating. Lubricate points indicated by dotted arrow shafts on both sides of equipment.

LUBRICANT · INTERVAL

INTERVAL · LUBRICANT



EXTERNAL STORES SUPPORT ASSEMBLY AND LEFT HAND RACK AND SUPPORT ASSEMBLY LEFT FRONT VIEW

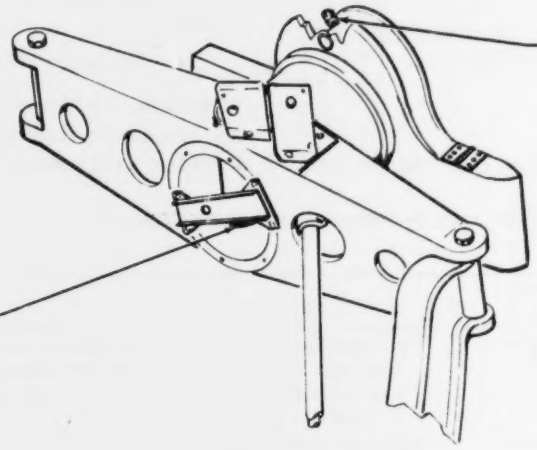
(DUST SHIELD REMOVED)

WE 16126

Figure 3-1. Lubrication order (sheet 1 of 2.)

LUBRICANT · INTERVAL

INTERVAL · LUBRICANT



EXTERNAL STORES SUPPORT ASSEMBLY AND
LEFT HAND RACK AND SUPPORT ASSEMBLY
RIGHT FRONT VIEW

-KEY-

FOLD FOLD

LUBRICANTS	EXPECTED TEMPERATURES			FOR ARCTIC OPERATIONS refer to TM 9-207	INTERVALS
	Above +32°F	+40°F to -10°F	0°F to -65°F		
CR - CLEANING COMPOUND, solvent	ALL TEMPERATURES				D - Daily
PL - LUBRICATING OIL, general purpose	PL (Special)	PL (Special)	LAW		
LAW - LUBRICATING OIL, weapons	Replaces PL (Special) at low temperatures				

-NOTES-

1. **RACK AND SUPPORT ASSEMBLY** - Daily, after firing, clean external surfaces and external pulleys, screws, pads, pin, and hinge with a cloth moistened with CR. Wipe dry and lubricate with PL Special. During inactive periods of more than 7 days or as local conditions dictate, clean with TPM or SD, wipe dry, and lubricate with PL Special.

2. **LUBRICATE AT TIME OF REMOVAL OF DUST SHIELD** Clean pulley and washer with a cloth moistened with TPM or SD, wipe dry, and lubricate with PL Special.

3. **DO NOT LUBRICATE** - Bomb rack MA4A.

Reporting of Lubrication Order Improvement- Use DA Form 2028 for reporting of errors, ommisions, and recommendations for improvement direct to: Commanding General, Headquarters, U. S. Army Weapons Command, ATTN: AMSWE-SMM-P, Rock Island Arsenal, Rock Island, Illinois 61201.

Copy of this lubrication order will remain with the equipment at all times. Instructions contained herein are mandatory and supersede all conflicting lubrication instructions dated prior to the date of this lubrication order.

By Order of the Secretary of the Army:

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

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Figure 3-1. Lubrication order (sheet 2 of 2).

Section III. PREVENTIVE-MAINTENANCE CHECKS AND SERVICES

3-5. General.

Preventive maintenance is systematic care, inspection, and servicing of materiel.

3-6. Scope.

a. The checks and services required for preventive maintenance are divided into two categories.

(1) *Daily inspection.* Refer to table 3-2.

Caution: **Perform pre-flight services before any armament item installed on mount XM156 is loaded with ammunition.**

Table 3-2. Preventive-Maintenance Checks & Services

Organizational Maintenance — Daily Inspection

Sequence Number	Required every	Item and procedure	Paragraph reference
3.1 and 7.1	Pre-flight	Rack and Support Assembly—Check for secure attachment to external stores support assembly. See that sway brace pads hold rocket launcher firmly in place.	
3.2 and 7.2	Pre-flight	Eectrical Cable Assemblies—Check for damage. Make sure connections are secure.	
9.3	Pre-flight	Reflex Sight XM60—Check for proper installation. See that sight mount swivels smoothly from stowed position to operating position. Clean beam-splitter. Turn on reticle light, move rheostat through entire range, and check reticle illumination. Turn elevation/depression knob through entire range; check for binding or rough travel.	
9.4	Pre-flight	Intervalometer—See that toggle guard is down over jettison switch and safety wired.	
9.5	Pre-flight	Arming Panel—See that OFF-SAFE-ARMED switch is in OFF position and ROCKETS REMAINING electrical solenoid is set on 0.	
3.5, 7.5, and 9.5	Pre-flight	Electrical Check—Move OFF-SAFE-ARMED switch to ARMED, RKT PAIR SELECTOR switch to 7, and ROCKETS REMAINING switch to 7. Press pilot or co-pilot firing switch (on cyclic stick); note that ROCKETS REMAINING electrical solenoid "steps" properly; have observer verify that rack assembly firing switch "steps" properly in each rack and support assembly. Move OFF-SAFE-ARMED electrical solenoid to SAFE. Press RKT RESET switch; have observer verify that each rack assembly firing switch moves to reset position. Move OFF-SAFE-ARMED switch to OFF.	
9.6	Post flight	Components of Mount XM156—Visually inspect components for mutilation, damage, or missing parts. Check for secure attachment and clean and lubricate in accordance with lubrication instructions.	Para 3-8

(2) *Intermediate inspection.* Refer to table 3-3.

Note. In tables 3-2 and 3-3, sequence numbers are decimals. The first digit tells the area of helicopter inspection (fig. 3-2) The second digit gives sequence of checks.

b. The sequence number column provides the identification numbers to be used when reporting uncorrected deficiencies on DA Form 2404.

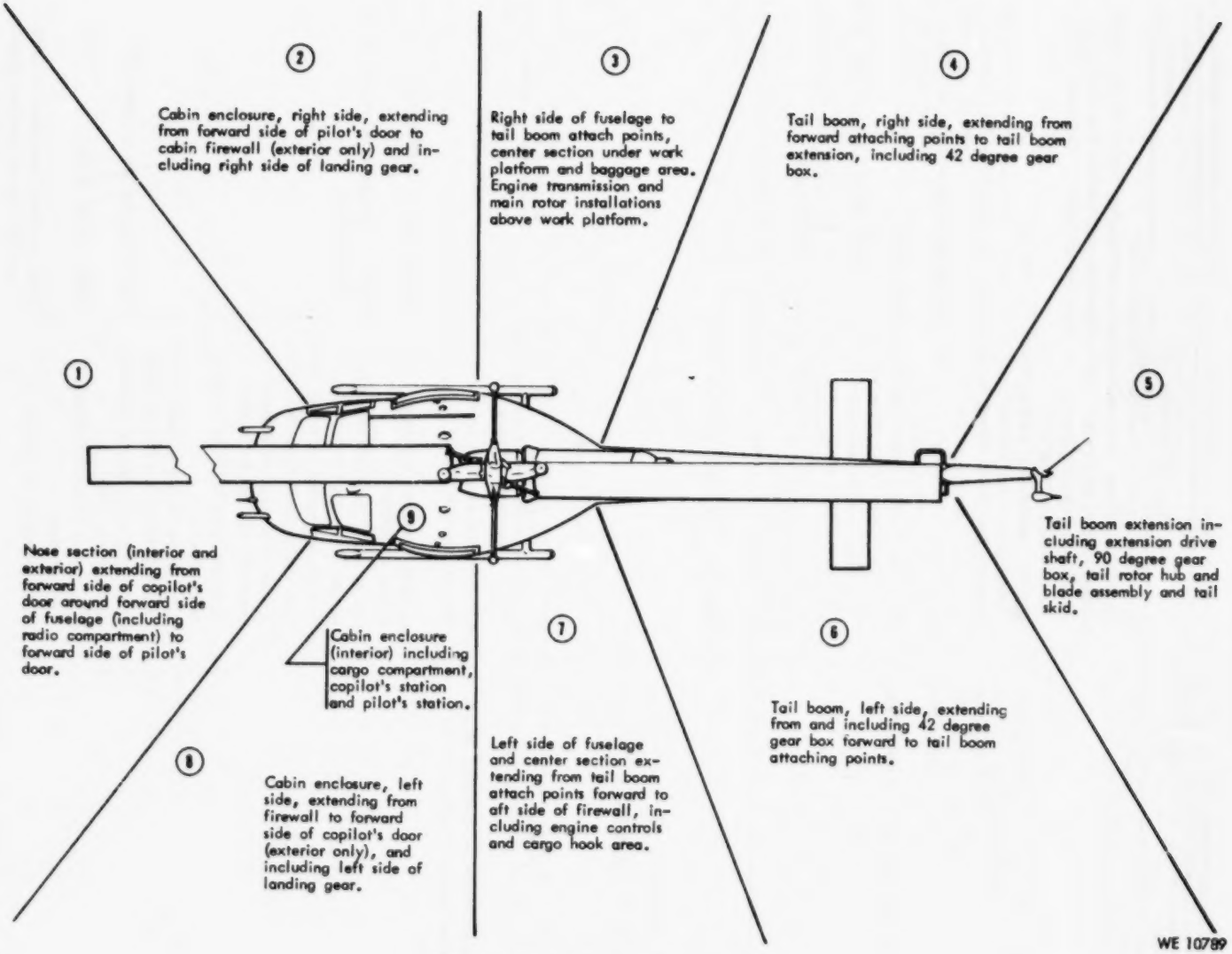

2
Cabin enclosure, right side, extending from forward side of pilot's door to cabin firewall (exterior only) and including right side of landing gear.
3
Right side of fuselage to tail boom attach points, center section under work platform and baggage area. Engine transmission and main rotor installations above work platform.
4
Tail boom, right side, extending from forward attaching points to tail boom extension, including 42 degree gear box.
1
5
Tail boom extension including extension drive shaft, 90 degree gear box, tail rotor hub and blade assembly and tail skid.
9
Nose section (interior and exterior) extending from forward side of copilot's door around forward side of fuselage (including radio compartment) to forward side of pilot's door.
Cabin enclosure (interior) including cargo compartment, copilot's station and pilot's station.
7
6
Tail boom, left side, extending from and including 42 degree gear box forward to tail boom attaching points.
8
Cabin enclosure, left side, extending from firewall to forward side of copilot's door (exterior only), and including left side of landing gear.
Left side of fuselage and center section extending from tail boom attach points forward to aft side of firewall, including engine controls and cargo hook area.
WE 10789

Figure 3-2. Helicopter inspection area.

Table 3-3. Preventive-Maintenance Checks & Services

Organizational Maintenance — Intermediate Inspection

Sequence number	Required every	Item and Procedure	Paragraph reference
3.1 and 7.1	Intermediate	Rack and Support Assemblies—Remove rocket launchers; check rack and support assemblies for bent, broken, or damaged parts. Examine support portion for cracks. Remove any burs and oxidation. Install rocket launcher.	
3.2 and 7.2	Intermediate	Electrical Cable Assemblies—Check for damaged insulation or connectors.	
9.3	Intermediate	Reflex Sight XM60—Check for damaged beamsplitter or optical elements	
9.4	Intermediate	Intervalometer and Arming Panel—Check for proper and secure installation.	
3.5, 7.5, and 9.5	Intermediate	Electrical Check—Raise toggle guard and place LAUNCHER JETTISON switch to ON to determine that rocket launchers will jettison electrically. Replace safety wire. *Caution*: Support both rocket launchers before checking jettison circuit.	

Section IV. TROUBLESHOOTING

3-7. General.

Refer to table 3-4.

Table 3-4. Troubleshooting

Malfunction	Probable cause	Corrective action
	MOUNT XM156	
Mount XM156 is carrying rocket launchers and rockets fail to fire.	Loose electrical connections at rear of launcher tube(s).	Tighten connections.
	Damaged electrical wiring in rocket launcher(s).	Replace rocket launcher(s).
	Loose or defective cable assemblies at the following locations: 1. Between rocket launcher and rack and support assembly. 2. Between rack and support assembly and the helicopter. 3. Cable assembly in aft cargo compartment. 4. Between ship's wiring and intervalometer or arming panel.	Tighten connectors or replace if unserviceable.
	Bent or defective igniter bracket on launcher tube.	Repair or replace as required.
	Igniter head fouled by residue from rocket.	Clean (para 3-13).
	Circuit breakers not pushed in.	Push in circuit breakers on auxiliary DC circuit breaker panel.
	Arming panel OFF-SAFE-ARMED not in ARMED position.	Move switch to ARMED.

Table 3-4. Troubleshooting—Continued

Malfunction	Probable cause	Corrective action
	MOUNT XM156—Continued	
Mount XM156 is carrying rocket launchers and rockets fail to fire—continued.	Intervalometer ARMAMENT SELECTOR switch in 7.62 position.	Move to 2.75 (rockets) position.
	Defective intervalometer.	Replace.
	Defective arming panel.	Replace.
Rack and support assembly cannot be adjusted in elevation.	Threads on elevation adjustment stud fouled by rocket residue.	Clean and lubricate threads (paras 3-3 and 3-13).
No reticle pattern or image appears when reflex sight lamp is switched on.	Lamp burned out.	Replace lamp(s) (fig. 3-8).

3-8. Electrical Checks.

a. Refer to table 3-5 and to figure 3-3.

Table 3-5. Troubleshooting Electrical Checks

Malfunction	Probable cause	Action required for check	Check between	Normal meter reading	Procedure	
					Meter reading normal	Meter reading abnormal
2.75-INCH AIRCRAFT ROCKET LAUNCHER XM158						
Open circuit in rocket launcher wiring conduit assembly.	Loose connection or broken wire.	Make continuity check.	Pins of connector J5009 and igniter head.	0.2 ohms or less.	----------	Repair and/or replace wire(s).
Stray voltage at igniter head of one or more tube assemblies.	Defective rack assembly firing switch (stepper switch).	Set rack assembly firing switch to reset.	Check for voltage between igniter heads and helicopter skin.	No voltage.	----------	Replace rack assembly firing switch.
MOUNT XM156						
Arming panel SAFE and ARMED indicator lights do not illuminate and pressing on light cap does not illuminate lamp.	Incandescent lamp(s) burned out.	Replace.				
Reticle image in reflex sight XM60 does not appear when switch is turned on.	Incandescent lamp burned out.	Replace.				

b. Before performing any troubleshooting electrical checks, make sure that all electrical connectors in the mount assembly are in place and securely fastened.

c. Many of the electrical checks provide only a momentary reading because of the electrical components which limit the length of firing current impulse to 60 milliseconds. Troubleshooting personnel must be aware of this condition. In most instances, two persons will be required to perform the checks, one using the test equipment and making readings and the second in the co-pilot's seat to operate the subsystem controls repeatedly to help secure reliable meter readings.

Caution: **Make sure the OFF-SAFE-ARMED switch is OFF and that the helicopter battery is disconnected before connecting or disconnecting any mount electrical connector or before connecting or disconnecting any external power source to the helicopter.**

Section V. OPERATOR AND ORGANIZATIONAL MAINTENANCE PROCEDURES

3-9. General.

This section describes maintenance procedures which are the responsibility of the operator/crew and organizational maintenance.

3-10. Maintenance and Adjustment.

Refer to table 2-2 and paragraph 4-2 for adjustments which are made without removal of equipment.

3-11. Removal.

Note. **Pull all aircraft armament circuit breakers in the overhead circuit breaker panel and assure that aircraft battery switch is OFF before connecting or disconnecting any mount electrical connectors.**

a. *Bomb Rack MA4A (fig. 3-5).* To remove bomb rack MA4A from rack and support assembly, loosen safety wire (20), and remove covers (2) and (3), sway brace bracket assemblies (10) and (12), spacers (15) and (16), pin (21), washer (22), and pin (23). Spring (24) will be removed from bomb rack MA4A if rack is replaced.

b. *Intervalometer.* Disconnect the aircraft cable assembly electrical connector from the mating electrical receptacle, unlock turnlock stud fasteners, and lift intervalometer from console. Access to connectors is made by removing adjacent top or side panels.

c. *Arming Panel.* Follow procedures outlined in b above.

d. *Reflex Sight XM60.* Remove items (1), (2), and (3) of figure 3-8 and remove sight XM60.

e. *Decal Bracket Assembly.* Refer to d above. Decal bracket assembly is removed during removal of sight XM60.

f. *Sight Mount.* See disassembly sequence in figure 3-9 for removal.

3-12. Disassembly.

a. *Mount Assembly.* Refer to figure 3-4.

b. *Left Hand and Right Hand Rack and Support Assemblies.* Refer to figure 3-5.

c. *Intervalometer.* Refer to figure 3-6.

d. *Arming Panel.* Refer to figure 3-7.

e. *Reflex Sight XM60.*

Caution: **For lamp replacement, make certain circuit breaker is open, lamp switch is set to off position, and lamp has cooled.**

Refer to figure 3-8.

f. *Reflex Sight Mount.* Refer to figure 3-9.

3-13. Cleaning, Inspection, and Repair.

Refer to figure 3-1 and TM 9-208-1 for cleaning instructions. Refer to tables 3-2 and 3-3 for inspection procedures. Replace unserviceable parts.

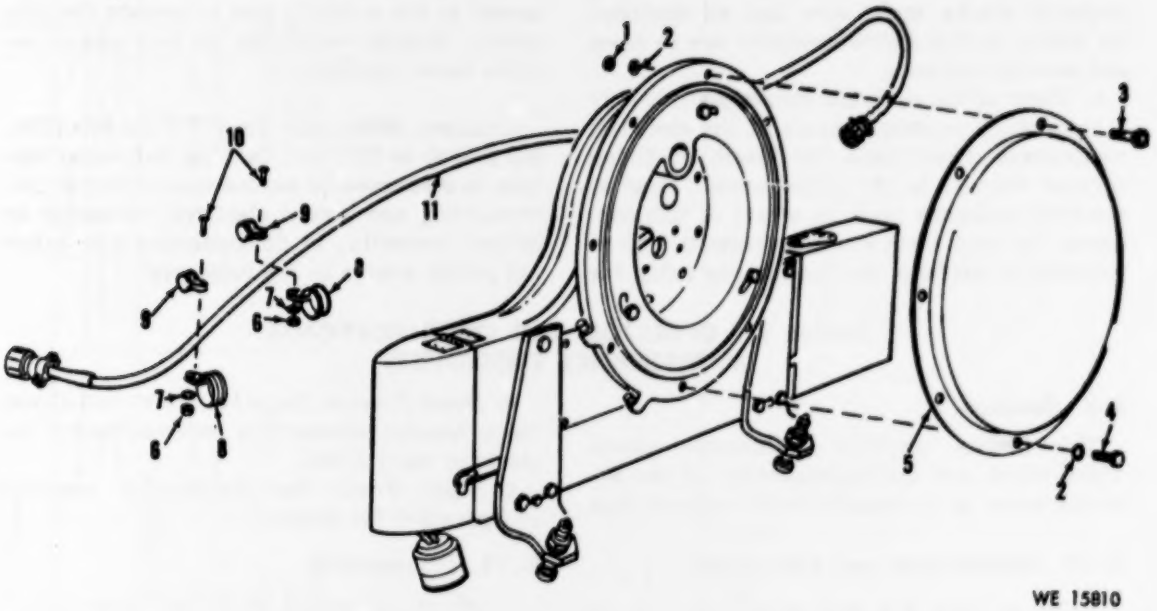
3-14. Assembly.

Assemble in reverse order of disassembly as outlined in paragraph 3-12 above.

3-15. Installation.

Caution: **Open circuit breakers before installing any mount XM156 component. Do not connect mount XM156 to helicopter battery until all mount components are installed.**

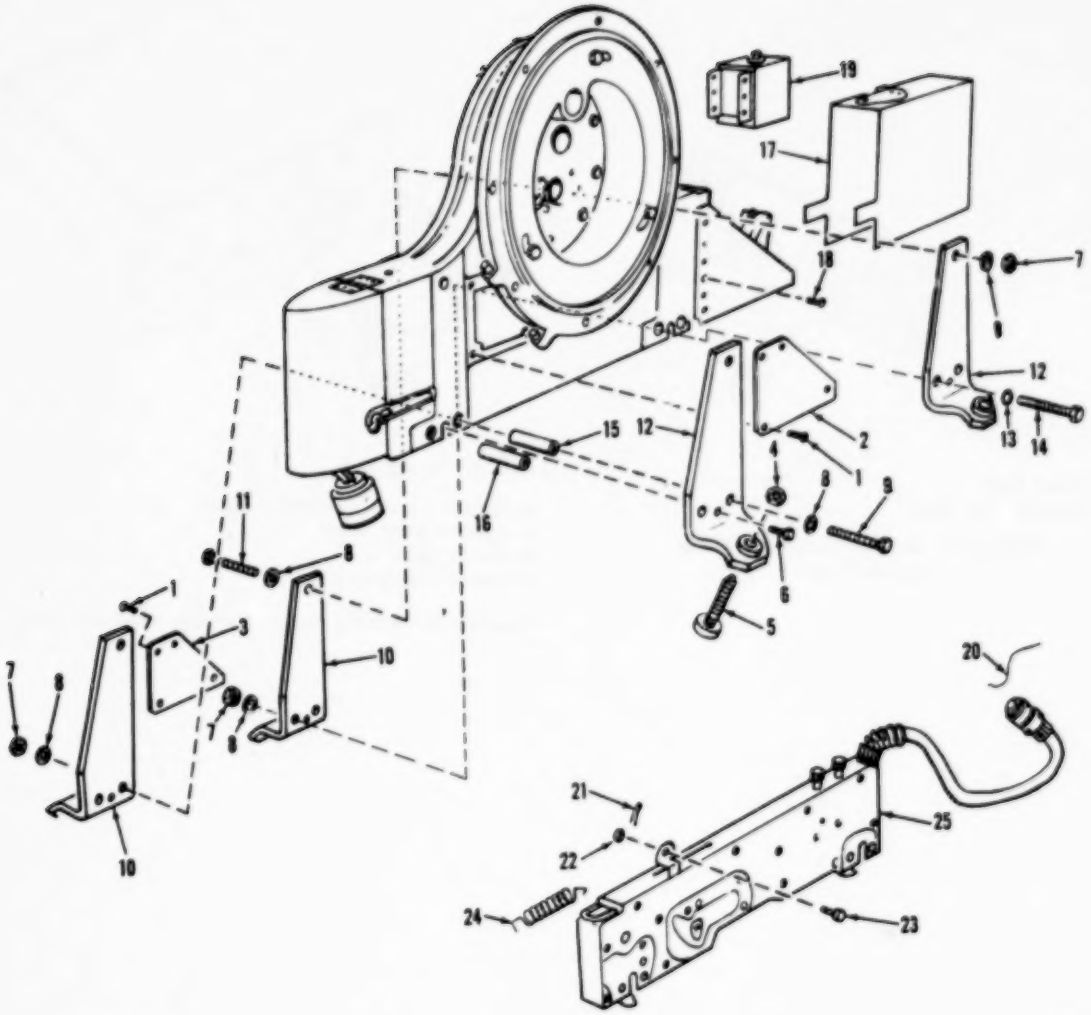
Install or replace in reverse order of removal in paragraph 3-11 above.



LEGEND to fig. 3-4:

1—Nut	5—Dust shield	9—Clamp
2—Washer	6—Nut	10—Screw
3—Bolt	7—Washer	11—Cable assembly
4—Bolt	8—Clamp	

Figure 3-4. Mount assembly—partially exploded view.

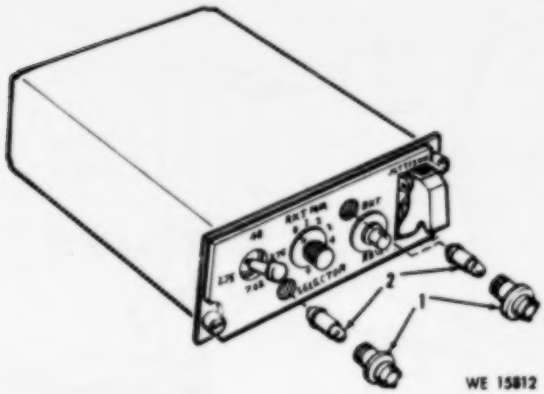


WE 15811

LEGEND to fig. 3-5:

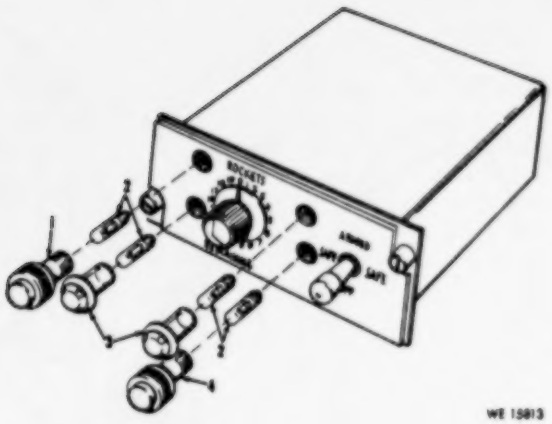
1—Screw
2—Cover
3—Cover
4—Nut
5—Pad
6—Screw
7—Nut
8—Washer
9—Bolt
10—Bracket assembly
11—Bolt
12—Bracket assembly
13—Washer
14—Bolt
15—Spacer
16—Spacer
17—Fairing assembly
18—Screw
19—Switch
20—Safety wire
21—Pin
22—Washer
23—Pin
24—Spring
25—Bomb rack

Figure 3-5. Rack and support assembly—partially exploded view—left hand shown.



1—Panel light
2—Incandescent lamp

Figure 3-6. Intervalometer—partially exploded view.



LEGEND to fig. 3-7:

1—Yellow (amber) indicator light
2—Incandescent lamp
3—Panel light
4—Green indicator light

Figure 3-7. Arming panel—partially exploded view.

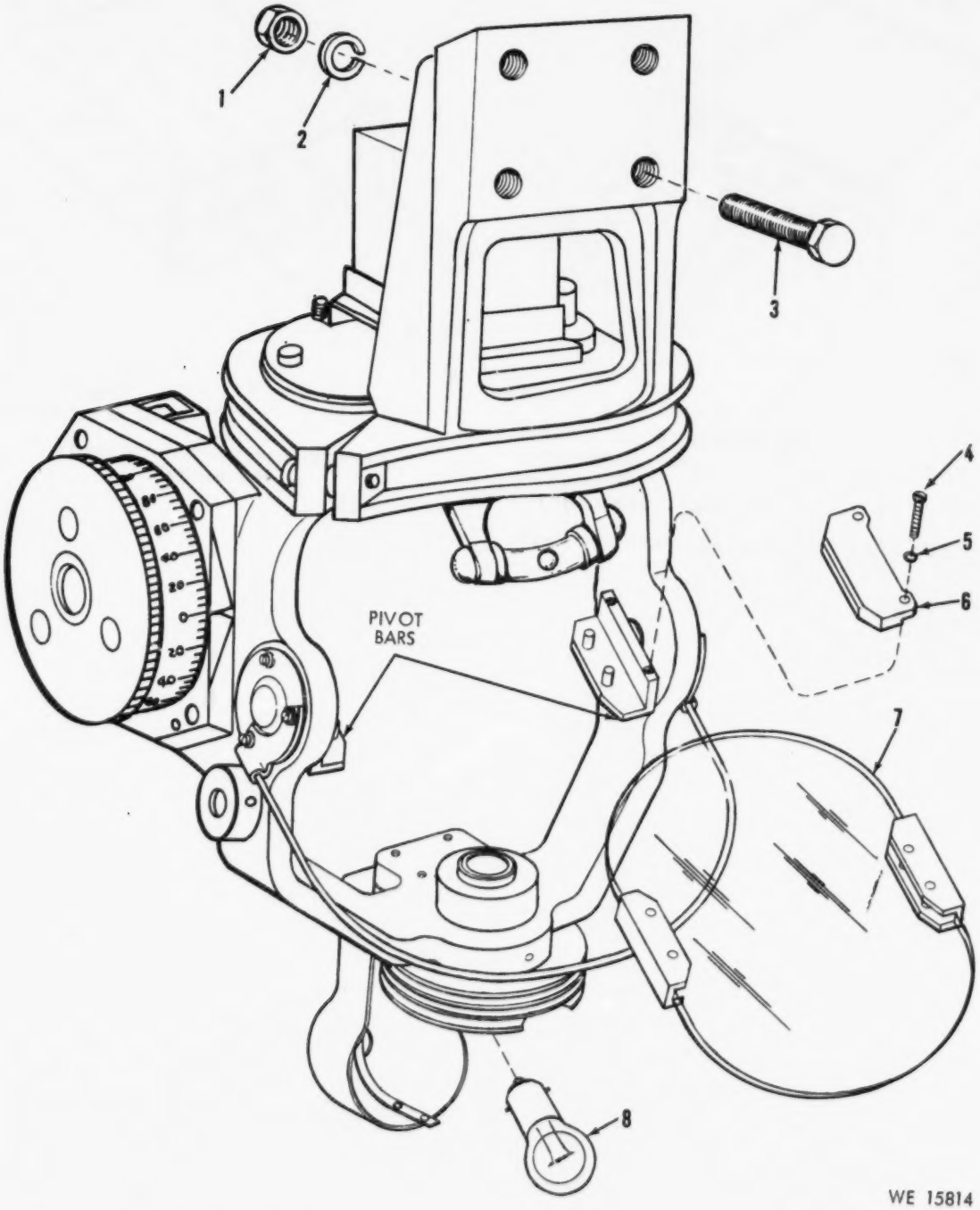


Figure 3-8. Reflex sight XM60—partially exploded view.

LEGEND to fig. 3-8:

1—Nut
2—Washer
3—Bolt
4—Screw
5—Washer
6—Retainer
7—Beamsplitter
8—Lamp

Figure 3-8—Continued.

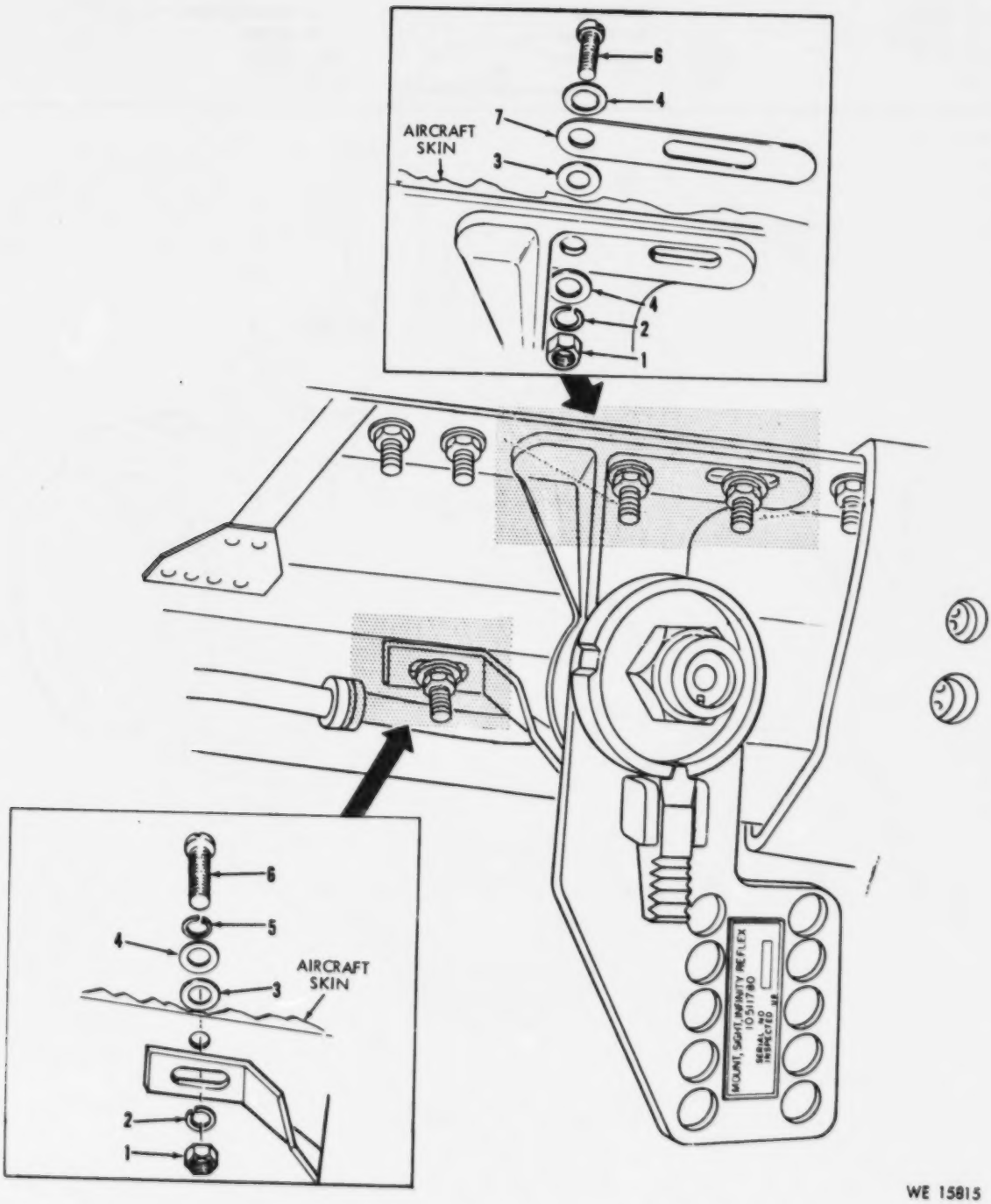


Figure 3-9. Reflex sight mount—partially exploded view.

LEGEND to fig. 3-9:

1—Nut
2—Washer
3—Gasket
4—Washer
5—Washer
6—Screw
7—Washer

Figure 3-9—Continued.

CHAPTER 4

MATERIEL USED IN CONJUNCTION WITH MAJOR ITEM

Section I. 2.75–INCH ROCKET LAUNCHERS

4–1. General.

a. The mount XM156 is capable of carrying and firing the 2.75–inch rocket launchers XM157, XM158, and XM159. For data pertaining to the three types of launchers, refer to table 4–1 and figure 4–1.

Table 4–1. 2.75–Inch Rocket Launchers

Model No.	Characteristics	Length (inches)	Weight (pounds)	Diameter (inches)	Figure No.
XM157	Reusable, nonrepairable cylinder containing 7 rocket tubes.	50	47	10	4–1
XM158	Reusable, repairable system consisting of 7 separate tubes, symmetrically secured by metal segments and straps.	53–3/8	45	10–3/8	4–1
XM159	Reusable, nonrepairable cylinder containing 19 rocket tubes.	54	140	19	4–1

b. The launchers are fixed systems, one each mounted under the rack and support assembly on either side of the aircraft, which requires the pilot to aim the aircraft at the target in both elevation and azimuth. The pilot uses reflex sight XM60 with its adjustable reticle for rocket aiming. Rockets can be fired by the pilot or co–pilot at helicopter speeds ranging from zero to maximum. The launchers can also be jettisoned simultaneously by either electrical or mechanical means. The three types of launchers utilize folding fin aircraft rockets, each 48 inches long and weighing approximately 18 pounds. Rockets fire singly from launches or in multiples of two or more at a rate of six rockets/pod/second, depending upon setting of rocket pair selector switch on intervalometer. Firing order for the launchers is shown in figure 4–2.

Note. **The procedures outlined in paragraphs 4–2 and 4–3 are the same for all three types of launchers, unless otherwise indicated.**

4–2. Boresighting.

Warning: **Do not attempt boresighting with rockets loaded in rocket launchers. Unload all launchers before proceeding.**

Refer to figure 4–3 and follow procedures outlined in a through m below.

a. Locate helicopter on ground, heading toward a distant aiming point 1200–1500 meters away.

b. Level helicopter. Stabilize by blocking under skids where cross tubes attach.

c. Use helicopter jacking points as centers and with a steel tape or wire, described a pair of locating arcs approximately 20 feet in front of the helicopter. Describe a second pair of locating arcs approximately 50 feet in front of the helicopter.

d. Stretch a chalked line between the two points and snap to mark the helicopter center line.

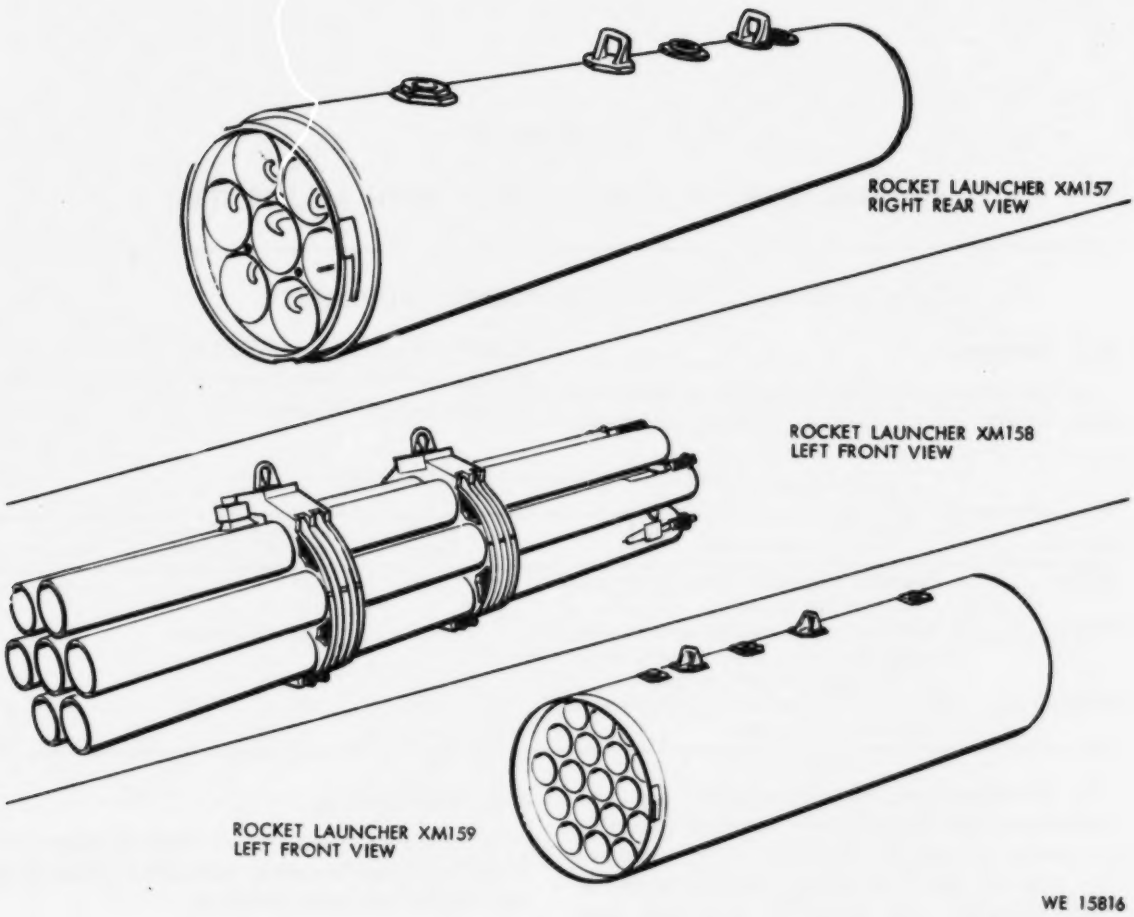


Figure 4–1. 2.75–inch rocket launchers.

e. Set rocket launchers to 103.2 mils elevation by adjusting rack and support assemblies in elevation as shown in figure 4–4.

f. Loosen sight socket head screw (fig. 1–4) and aline sight approximately parallel to helicopter.

g. Adjust sight in support until level vial and inclinometer show sight is level.

h. Turn on reticle lamp and adjust sight in azimuth until sight pip will track a line parallel to the helicopter center line when beamsplitter is rotated through full travel.

i. Tighten socket head screw in sight (fig. 1–4).

j. Set beamsplitter at approximately 103.2 mils elevation. Jack and reposition the helicopter as needed to put sight pip on distant aiming point.

k. Loosen sway braces for left rocket launcher. Sight through center tube of launcher and adjust boresight alining screws (6, fig. 3–5) until center line of center tube is on distant aiming point. Tighten sway braces flush with launcher skin, tighten another quarter turn, and lock.

l. Repeat k above for right rocker launcher.

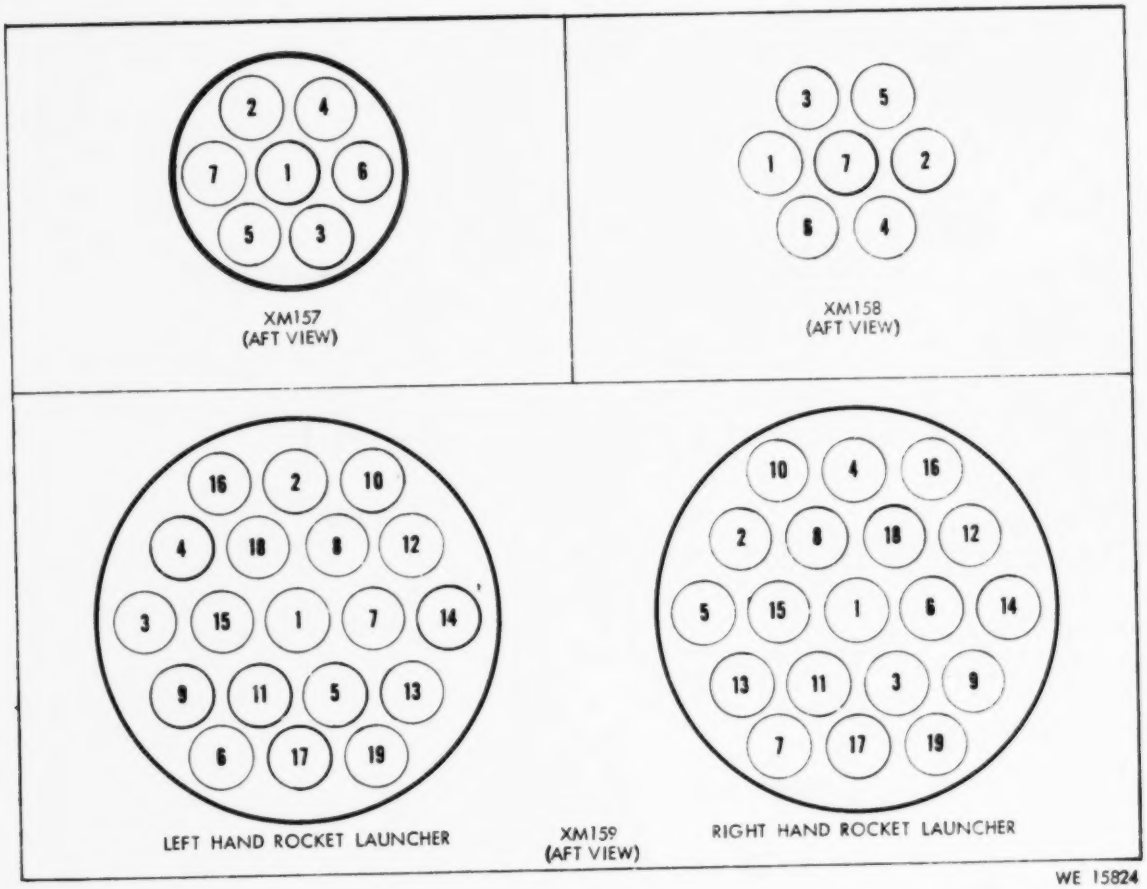


Figure 4–2. Firing order for 2.75–inch rocket launchers XM157, XM158, and XM159.

m. Loosen boresight alining screws (6, fig. 3–5) on each rack and support assembly one quarter turn.

4–3. Loading or Unloading Rocket Launcher.

Warning: **Before inserting or removing 2.75-inch rockets, perform tests indicated in *a* below and observe instructions shown in figure 4–5.**

Note. The tests outlined in a(1) through (3) below are applicable regardless of which of the three types of launchers (fig. 4–1) is installed on the mount XM156.

a. *Preparation for Loading or Unloading Launchers.*

(1) *Stray voltage test (pre-loading).*

Note. See that all electrical connectors are secure.

(a) Use a multimeter 6625–643–1693 set to the 2.5–volt DC range.

(b) Touch one multimeter lead to an unpainted spot on the aircraft structure and touch the second lead to the rocket firing contact of each tub of the launcher in sequence (fig. 4–2).

(c) If any voltage reading is obtained when testing any tube, do not load

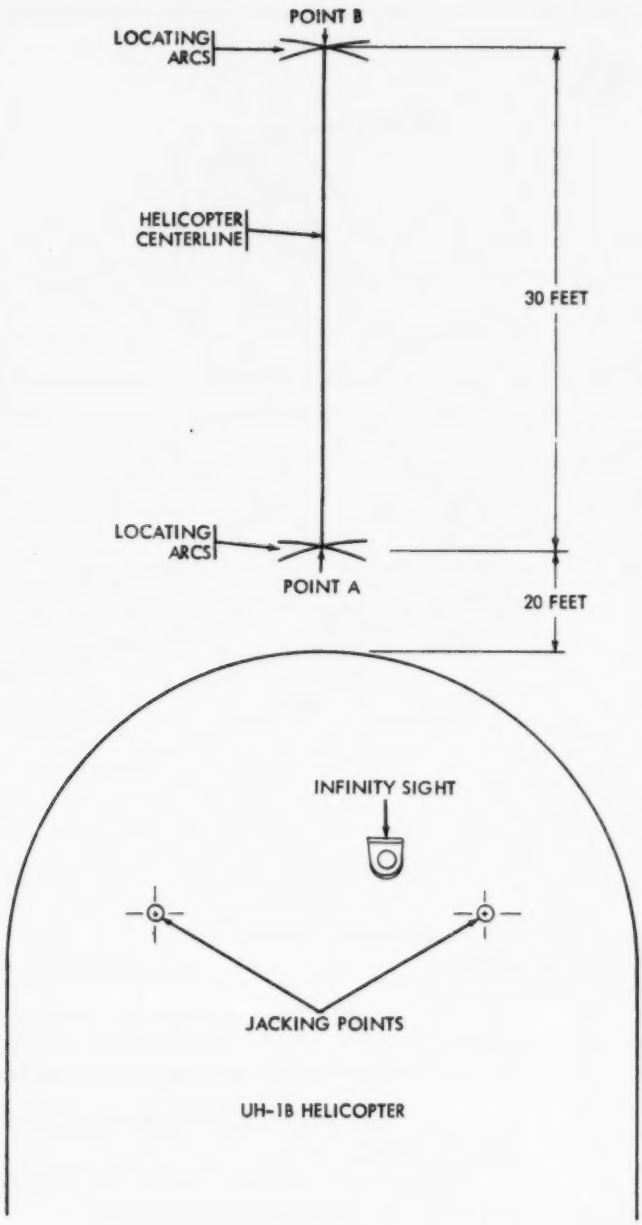


Figure 4-3. Boresighting procedure (sheet 1 of 2).

rockets into launcher until trouble has been corrected.

(2) *Rocket firing voltage test (pre-loading).*

(a) Make the following switch and control settings:

1. OFF-SAFE-ARMED switch to SAFE.

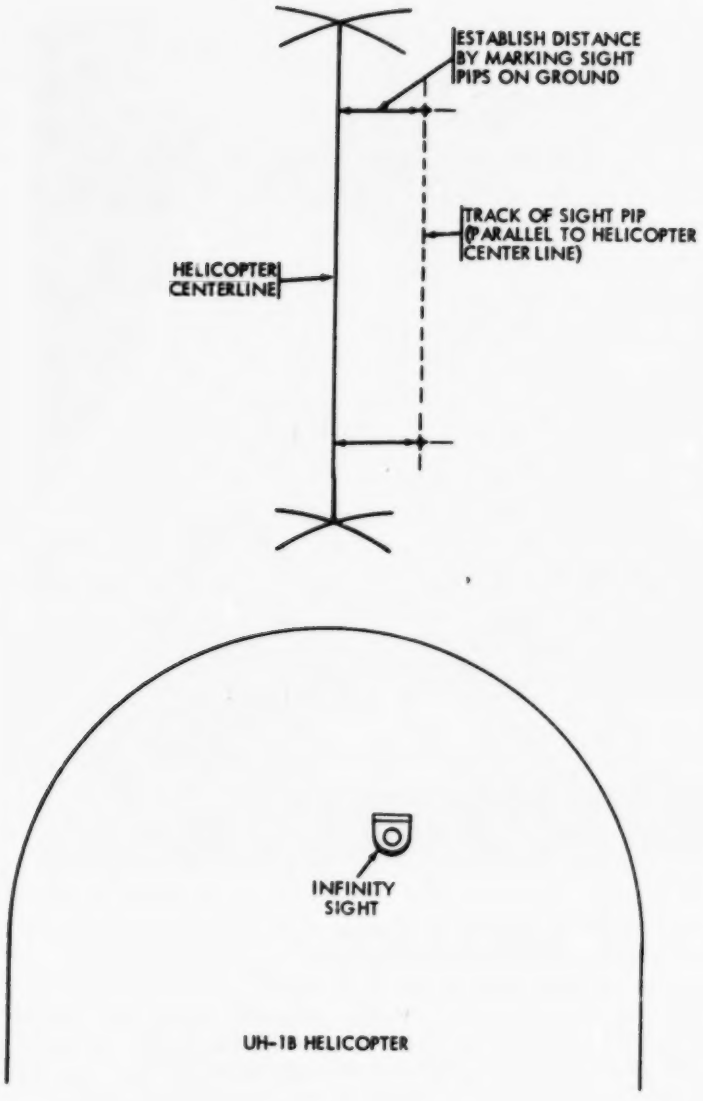

ESTABLISH DISTANCE BY MARKING SIGHT PIPS ON GROUND
TRACK OF SIGHT PIP (PARALLEL TO HELICOPTER CENTER LINE)
HELICOPTER CENTERLINE
INFINITY SIGHT
UH-1B HELICOPTER
WE 15818

Figure 4–3. Boresighting procedure (sheet 2 of 2).

2. Armament selector switch to 2.75.
3. Rocket pair selector switch to 1.
4. All armament circuit breakers closed and external 28VDC power supplied to the helicopter.

(b) Set multimeter to 10–milliamps and put leads in common and 10–amp receptacles.

(c) Depress the rocket circuit reset switch to insure that the rack and support assembly firing switch is in reset position. Have a second operator visually verify the reset tion.

(d) Move the OFF–SAFE–ARMED switch to ARMED.

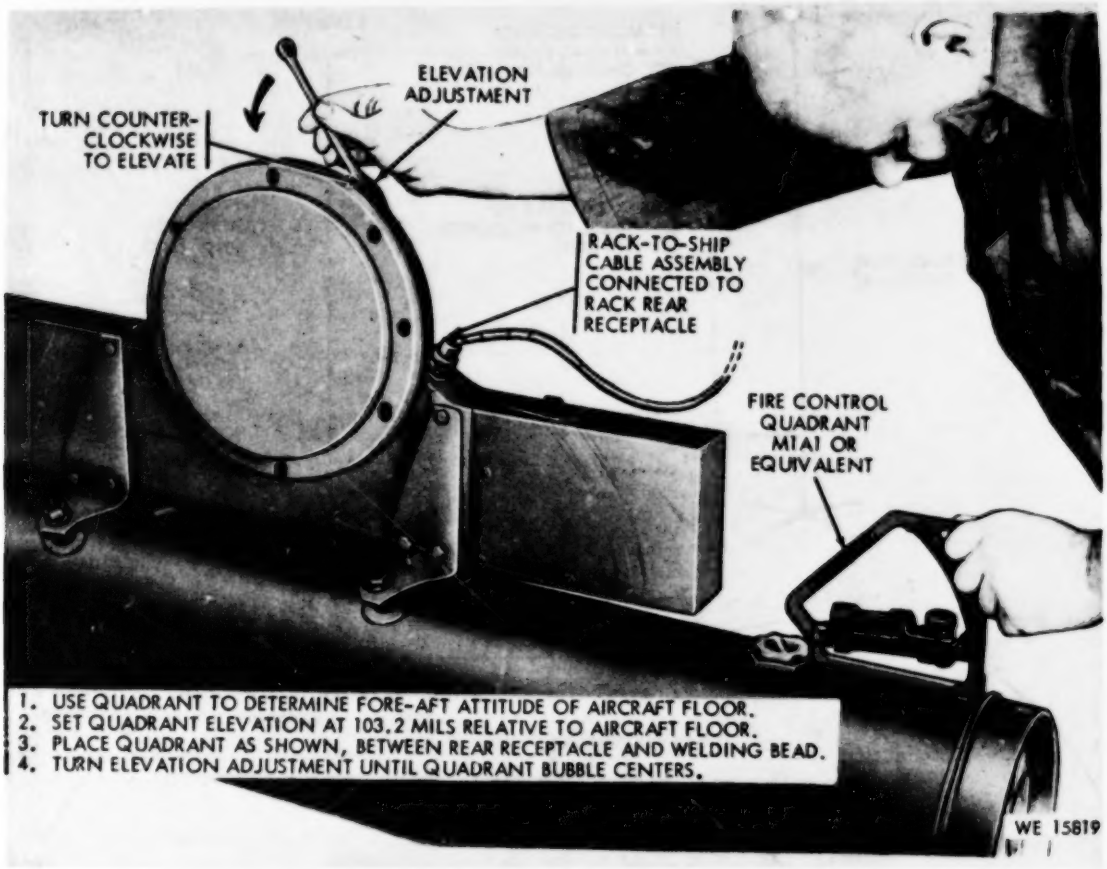

ELEVATION ADJUSTMENT
TURN COUNTER-CLOCKWISE TO ELEVATE
RACK-TO-SHIP CABLE ASSEMBLY CONNECTED TO RACK REAR RECEPTACLE
FIRE CONTROL QUADRANT M1A1 OR EQUIVALENT
1. USE QUADRANT TO DETERMINE FORE-AFT ATTITUDE OF AIRCRAFT FLOOR.
2. SET QUADRANT ELEVATION AT 103.2 MILS RELATIVE TO AIRCRAFT FLOOR.
3. PLACE QUADRANT AS SHOWN, BETWEEN REAR RECEPTACLE AND WELDING BEAD.
4. TURN ELEVATION ADJUSTMENT UNTIL QUADRANT BUBBLE CENTERS.
WE 15819

Figure 4-4. Adjusting rack and support assembly in elevation— left hand assembly shown—launcher XM157 or XM159 installed.

(e) Touch the negative lead of multimeter to an unpainted metal surface of the helicopter and touch the positive lead to the extreme tip of the rocket firing contact of launcher tube number 1 of right hand launcher (fig. 4-2).

(f) Observe the multimeter while cockpit operator depresses firing switch on cyclic stick. Meter needle should flicker momentarily, indicating a pulse of firing current.

(g) Press rocket circuit reset switch and shift positive lead to rocket firing contact of tube 2.

(h) Repeat (e), (f), and (g) above for the remaining tubes of right hand rocket launcher and for all tubes of the left hand launcher.

(3) *Final actions (pre-loading and pre-unloading).*

(a) Move OFF-SAFE-ARMED switch to OFF.

(b) Move helicopter master battery switch to OFF.

(c) If not already done, request helicopter mechanic to ground helicopter with a static ground cable.

(d) Disconnect mount from helicopter battery.

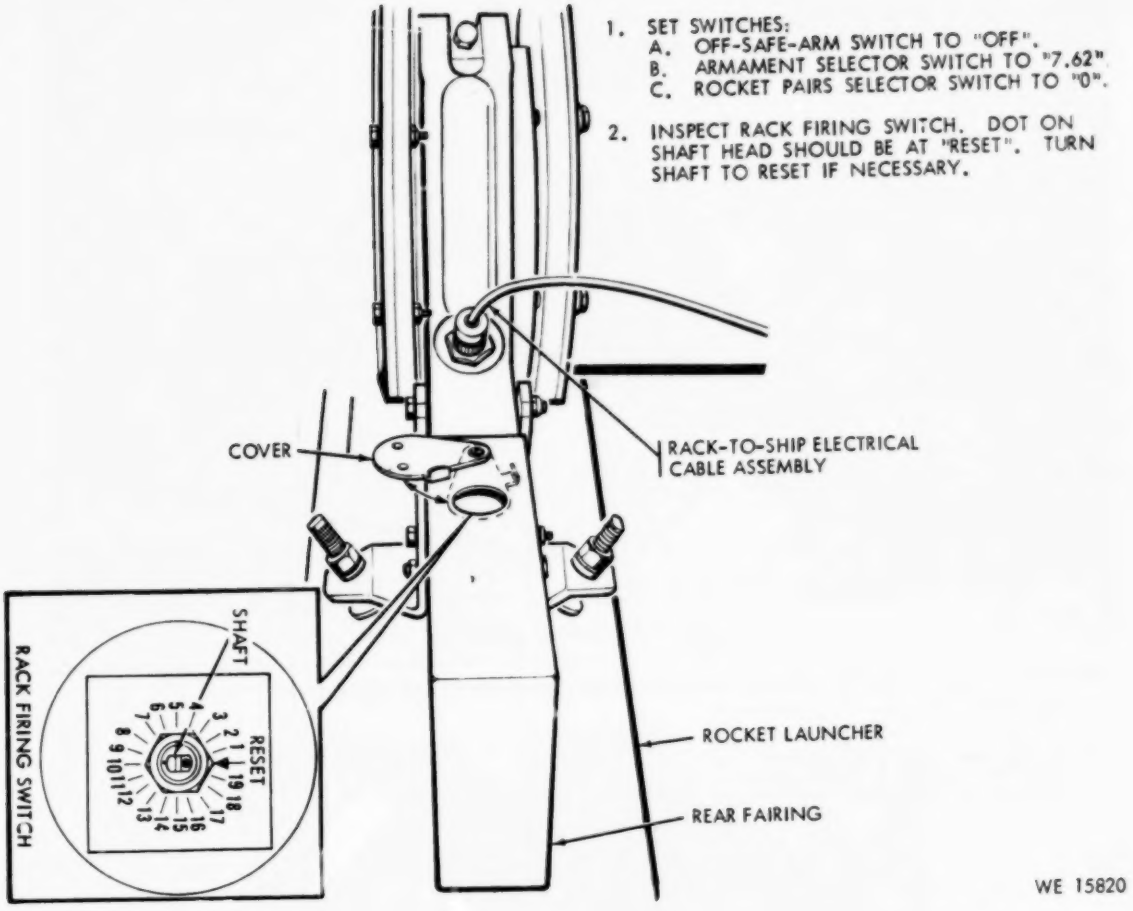

1. SET SWITCHES:
A. OFF-SAFE-ARM SWITCH TO "OFF".
B. ARMAMENT SELECTOR SWITCH TO "7.62".
C. ROCKET PAIRS SELECTOR SWITCH TO "0".
2. INSPECT RACK FIRING SWITCH. DOT ON SHAFT HEAD SHOULD BE AT "RESET". TURN SHAFT TO RESET IF NECESSARY.
COVER
RACK-TO-SHIP ELECTRICAL CABLE ASSEMBLY
SHAFT
RACK FIRING SWITCH
RESET
ROCKET LAUNCHER
REAR FAIRING
WE 15820

Figure 4–5. Preparation for loading or unloading rocket launchers.

(e) If an external power source has been connected to helicopter, disconnect.

(f) Observe instructions shown in figure 4–5.

b. *Loading Rocket Launcher.* Refer to figures 4–6 through 4–8.

Warning: **Use only rockets which are assembled in accordance with paragraph 4–4*b*. Touch rocket fin retainer (shorting cap) to bare metal on launcher to drain off any static electricity when loading.**

Caution: **Do not remove fin retainer from rocket until loading the launcher. Carefully store fin retainers for use when unloading rockets from launcher.**

c. *Unloading Rocket Launcher.* Prepare mount and rocket launcher for unloading as shown in figure 4–5 and as outlined in a(3) above. Remove rockets as shown in figures 4–6 and 4–7 and install fin retainer on each rocket.

4–4. Authorized Rounds.

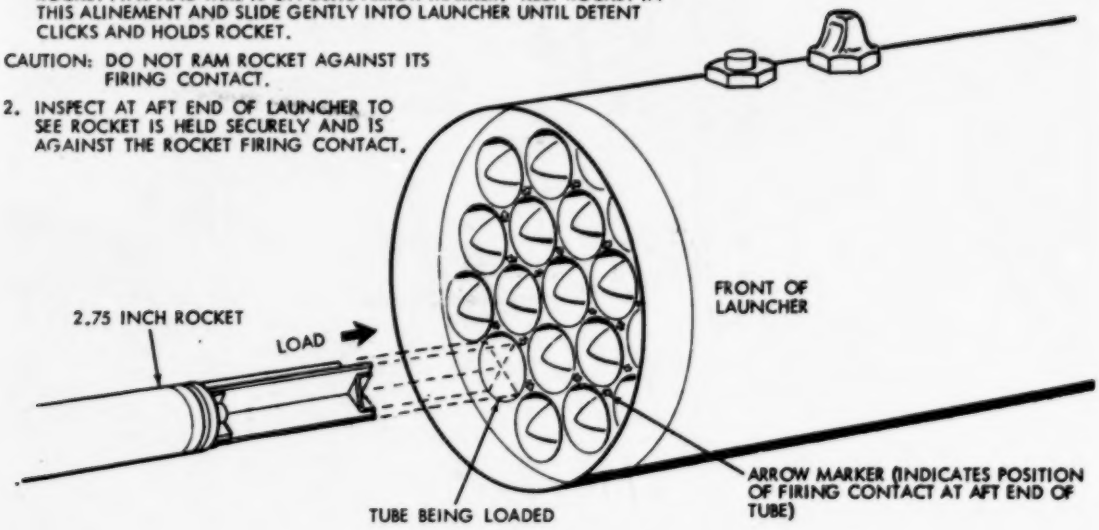
a. *General.* Only modify scarffed rockets are authorized. Refer to table 4–2.

WARNING: FOLLOW STEPS SHOWN IN FIGURE 4-5 BEFORE LOADING LAUNCHERS.

1. LOAD ROCKET SO THAT ARROW MARKER OF TUBE IS MIDWAY BETWEEN TWO ROCKET FINS AND WIRE IS OPPOSITE ARROW MARKER. KEEP ROCKET IN THIS ALINEMENT AND SLIDE GENTLY INTO LAUNCHER UNTIL DETENT CLICKS AND HOLDS ROCKET.

CAUTION: DO NOT RAM ROCKET AGAINST ITS FIRING CONTACT.

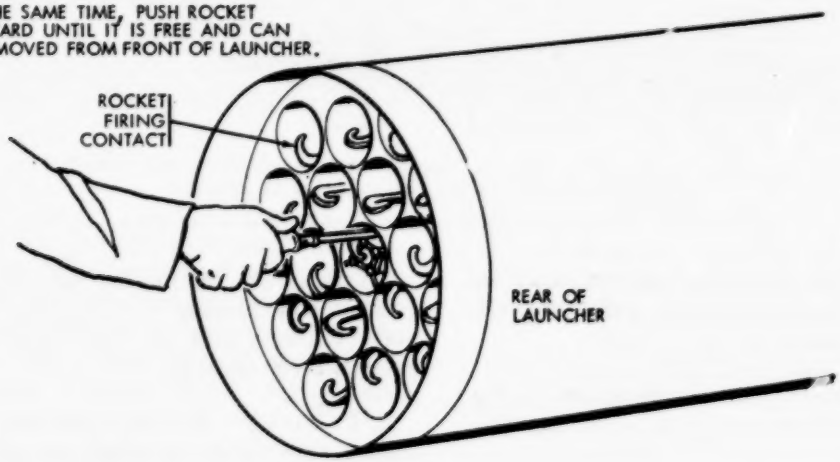
2. INSPECT AT AFT END OF LAUNCHER TO SEE ROCKET IS HELD SECURELY AND IS AGAINST THE ROCKET FIRING CONTACT.


2.75 INCH ROCKET
LOAD
FRONT OF LAUNCHER
ARROW MARKER (INDICATES POSITION OF FIRING CONTACT AT AFT END OF TUBE)
TUBE BEING LOADED

LOADING ROCKET INTO LAUNCHER

WARNING: FOLLOW STEPS SHOWN IN FIGURE 4-5 BEFORE UNLOADING LAUNCHERS.

1. USE LONG SCREWDRIVER AS SHOWN TO LIFT DETENT AWAY FROM ROCKET.
2. AT THE SAME TIME, PUSH ROCKET FORWARD UNTIL IT IS FREE AND CAN BE REMOVED FROM FRONT OF LAUNCHER.



UNLOADING ROCKET FROM LAUNCHER

WE 15821

Figure 4-6. Loading/unloading 2.75-inch rocket launcher XM157 or XM159.

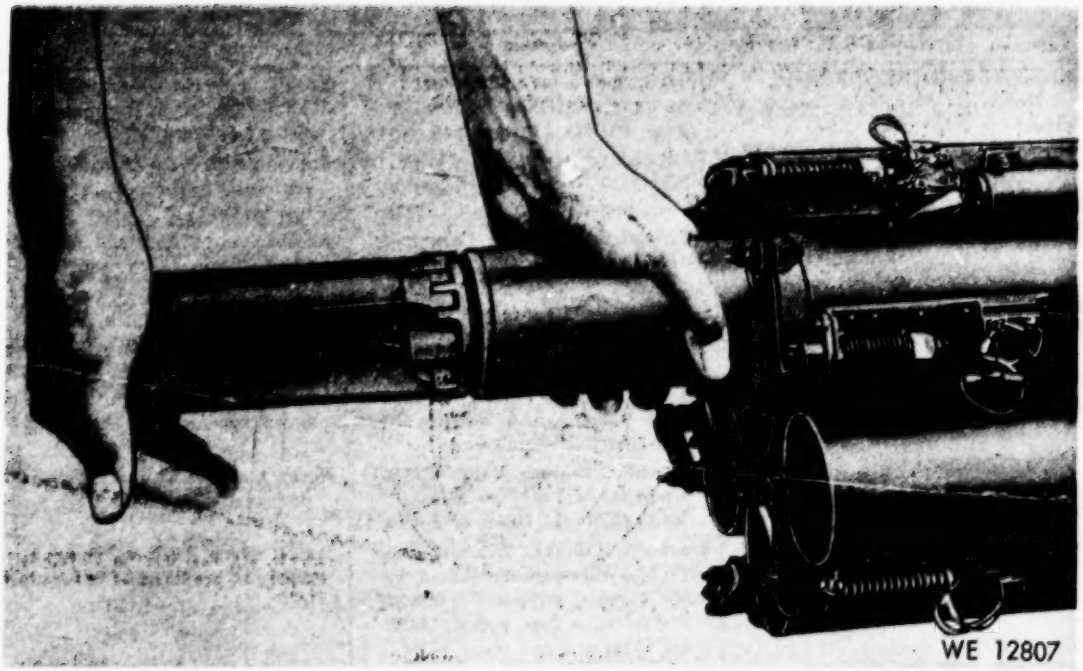


Figure 4-7. Loading/unloading 2.75-inch rocket launcher XM158.

Figure 4-8. 2.75-inch rocket loaded in tube number 5 of rocket launcher XM158.

Table 4-2. Authorized Rounds

Nomenclature	Warheads	* Motor
ROCKET, HIGH EXPLOSIVE, 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch, H.E. Mk 1 and mods (HBX-1 loaded) w/ fuze, PD Mk 176 and mods.	Rocket motor, 2.75-inch, Mk 2 or Mk 4 with mods, w/propellant Mk 43 and mods.
ROCKET, HIGH EXPLOSIVE, 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch, H.E. M151 (XM151), (Comp B-4 loaded w/ fuze, rocket, PD M423 (XM423).	Rocket motor, 2.75-inch, Mk 40 and mods, w/propellant Mk 43 and mods.
ROCKET, PRACTICE, 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch Mk 1 and mods (inert loaded) w/fuze Mk 176, dummy.	Rocket motor, 2.75#inch, Mk 2 or Mk 4 with mods, w/propellant Mk 43 and mods.
ROCKET, PRACTICE, 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch M151 (XM151) (inert loaded) w/fuze, rocket, 423 (XM423) inert or dummy).	Rocket motor, 2.75-inch, Mk 40 with mods, w/propellant Mk 43.
ROCKET, INERT 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch, Mk 1 Mod 3 mods (inert loaded) w/fuze, Mk 176 (inert or dummy).	Rocket motor, 2.75-inch, Mk 1 Mod 3, w/propellant Mk 31 Mod 1.
ROCKET, INERT 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch M151 (XM151) (inert loaded) w/fuze, rocket, M423 (XM423) (inert or dummy).	Rocket motor, 2.75-inch, Mk 40 with mods (inert loaded).
ROCKET, SMOKE, WHITE PHOSPHOROUS (WP) 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch E12 and mods (White Phosphorous loaded w/ HE burster) w/fuze, PD Mk 176 and mods, or fuze, rocket, M423 (XM423).	Rocket motor, Mk 2 or Mk 4 with mods, w/propellant Mk 43 and mods.
ROCKET, SMOKE, WHITE PHOSPHOROUS (WP) 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch M156 (E13) (White Phosphorous loaded w/ HE burster) w/fuse, rocket, M423 (XM423).	Rocket motor, Mk 40 with mods, w/propellant Mk 43 and mods.
ROCKET, TARGET MARKER, HIGH EXPLOSIVE, 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch, H.E. XM152 (Baratol loaded) red marker, w/ fuze, rocket, M423 (XM423).	Rocket motor, Mk 40 with mods, w/propellant Mk 43 and mods.
ROCKET, TARGET MARKER, HIGH EXPLOSIVE, 2.75-INCH: LSFFAR (unassembled)	Warhead, 2.75-inch, H.E. XM153 Baratol loaded) yellow marker, w/fuze, rocket, M423 (XM423).	Rocket motor, Mk 40 with mods, w/propellant Mk 43 and mods.

b. *Assembly of Rockets.*

(1) *General.* Rocket motors with two crimps, 180 degrees apart, at the forward end of the motor tube are known as dimpled motors. Many rocket motors are undimpled. Dimpled and undimpled motors are assembled in the same manner.

Note. On some rocket motors there is a rubber ring under the lip of the warhead shipping support and a fiber shim between the warhead shipping support and the warhead closure. Remove and discard ring and shim.

(2) *Assembly procedure.*

(a) Hold rocket motor with strap wrench (maximum width two inches) in forward 2-1/2-inch-wide area of rocket motor. Use strap wrench dressing (no slip liquid) on inner surface of strap.

Warning: **Deformed motor tubes will be reported to ammunition personnel for disposition.**

(b) Using a strap wrench on the warhead, tighten the warhead as much

*This motors may have marking to indicate former Mk 1, Mk 2, Mk 3, and Mk 4 models; however, when the nozzles are scarffed to a 24 degree angle they are identified as Mk 40 LSFFAR motors. Motors of recent manufacture (1965 and later) will be identified on as Mk 40 LSFFAR.

as possible without turning the head closure, which would deform the motor tube dimples or force the lockwire into or out of elongated hole in motor tube. Motor tubes with inadvertently flattened dimples may be used if lockwire tab has not been forced into or out of elongated hole in motor tube and if examination shows no cracks or other motor tube damage. If examination shows damage, return to ammunition personnel for disposition.

Note. Late model motors may have tabless lockwires or be of integral bulkhead (lockwire-less) design.

(c) Activities which have access to a nose-f... torque wrench should apply 55 ft–lbs torque to tighten the warhead. Properly made dimples will resist 80 ft–lbs torque.

Warning: **Failure to torque warhead to rocket motor to required mimimum 55 ft–lbs may result in loss of warhead in flight or upon firing.**

(d) If a gap exists between forward end of rocket motor and warhead after assembly, return to ammunition personnel for disposition. A gap is defined as failure of warhead to seat on forward end of rocket motor at any point for a full 360 degrees after tightening.

(e) Inspect rockets for deep scores, abrasions, deformations of motor tube, loose warhead or gap between warhead and rocket motor.

Caution: **Do not use rockets with any of the above defects; return to ammunition personnel for disposition.**

SECTION II. OTHER ARMAMENT

Information to be incorporated when available.

CHAPTER 5

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

5-1. Preparation and Loading of Equipment for Shipment.

When shipping the helicopter mount XM156, the officer in charge will be responsible for materiel being shipped in a serviceable condition, properly processed, packaged, and packed, including the preparation of Army shipping documents (AR 711-16 and AR 725-50).

5-2. Preparation of Equipment for Limited Storage.

a. Lack of time, trained personnel, or proper tools may result in a unit being incapable of performing maintenance for which it is responsible. In such cases, unit commanders, with the approval of major commanders, may place materiel that is beyond the maintenance capability of the unit, in administrative storage or return it to supply agencies. When preparing the materiel for administrative storage, including all tools and equipment, the commander will be responsible for processing in such a manner as to protect it against corrosion deterioration, and physical damage.

b. The materiel, whether installed or removed from the helicopter, will be cleaned, dried, and coated with a film of general purpose lubricating oil (PL Special) for temperatures above "0" degree F, for temperatures below "0" degree F, use weapons lubricating oil (LAW).

c. Administrative storage is restricted to a period of 90 days and must not be extended unless the materiel is reprocessed in accordance with d below.

d. Disassembly will be limited to that necessary to clean and preserve surfaces. Except as otherwise noted, and to the maximum extent consistent with safe storage, materiel will be placed in administrative storage in as nearly a completely assembled condition as practicable.

e. Materiel should be stored in the most favorable location available, preferably one which affords protection from exposure to the elements and from pilferage.

f. A quarterly preventive-maintenance service should be performed on all materiel. This will consist of inspecting, cleaning, servicing, preserving, lubricating, adjusting, and replacement of repair parts, if required.

g. Mark and tag materiel "Administrative Storage" and place tag in a convenient location. Materiel so marked will not be operated while in this category.

h. Visual inspection of materiel in administrative storage must be conducted at least once each month. Disassembly, within scope of the organization, will be performed as necessary to fully ascertain the extent of any deterioration or damage found. A record of these inspections will be maintained and attached thereto.

i. When rust or deterioration is found on any unpainted area, necessary reprocessing will immediately be accomplished. Painted surfaces showing evidence of rust, corrosion, etc., will be cleaned, dried, and repainted.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

5-3. General.

a. If destruction to prevent enemy use is necessary, materiel must be so badly damaged that it cannot be restored to usable condition in the combat zone, either by repair or cannibalization. Adequate destruction requires that all parts essential to operation of the launchers and mount, including essential spare parts, be destroyed or damaged beyond repair.

b. It is equally important that the same essential parts be destroyed on all like materiel, so that the enemy cannot construct one complete unit from several damaged units.

5-4. Priorities for Destruction.

The priority for destruction of equipment components shall be as follows:

Priority 1—Rack and support assemblies
Priority 2—Rocket launchers
Priority 3—Rockets
Priority 4—Reflex sight XM60

5-5. Authorization.

The authority for ordering the destruction of equipment is vested in the divisional and high commanders, who may delegate authority to subordinate commanders when the situation requires.

APPENDIX A

REFERENCES

1. Publication Indexes.

Consult the following frequently for the latest changes or revision to references given in this appendix and for new publications on the materiel covered in this manual.

Index of Administrative Publications	DA Pam 310-1
Index of Blank Forms	DA Pam 310-2
Indev of Doctrinal, Training, and Organizational Publications	DA Pam 310-3
Index of Supply Catalogs and Supply Manuals	DA Pam 310-6
Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8 and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders	DA Pam 310-4

2. Forms.

In addition to the forms required by the Department of the Army Equipment Record Procedures (TM 38-750), the following forms pertain to this materiel:

Materiel Inspection Tag	DD Form 9-1
Recommended Changes to DA Publications	DA Form 2028
Report of Damaged or Improper Shipment	DD Form 6
Request for Issue or Turn-In	DA Form 1546
Requisition for Initial Distribution of Publications and Blank Forms	DA Form 12-31
Requisition for Publications and Blank Forms	DA Form 17

3. Other Publications.

The following publications contain information pertinent to this materiel and associated equipment.

a. Ammunition.

Ammunition for Training in Oversea Theaters	TA 23-100-3
Ammunition, General	TM 9-1900
Ammunition, Rockets, and Missiles for Basic and Advanced Individual Training (by MOS)	TA 25-100-1
Ammunition, Rockets, and Missiles for Unit Training—Active Army and Reserve Components	TA 23-100-6
Ammunition Service in the Theater of Operations	FM 9-6
Care, Handling, Preservation, and Destruction of Ammunition	TM 9-1300-206
Distribution of Ammunition for Training	AR 710-1300-1
Identification List—FSC 13, AMMUNITION AND EXPLOSIVES, Class 1340—Rockets and Rocket Ammunition	SC 1340-98-IL
Malfunctions Involving Ammunition and Explosives	AR 700-1300-8

Organizational Maintenance Repair Parts and Special Tools List for Mount, Multiarmament, Helicopter: XM156 (1090-930-5018) (Used on UH-1B or UH-1C Helicopters) ---------- TM 9-1090-204-20P
Regulations for Firing Ammunition for Training, Target Practice and Combat ---------- AR 385-63
Rockets ---------- TM 9-1950

b. Camouflage.

Camouflage, Basic Principles and Field Camouflage ---------- FM 5-20

c. Decontamination.

Chemical, Biological, and Radiological (CBR) Decontamination ---------- TM 3-220
Small Unit Procedures in Chemical, Biological, and Radiological (CBR) Operations ---------- FM 21-40

d. Destruction to Prevent Enemy Use.

Explosives and Demolitions ---------- FM 5-25
Ordnance Service in the Field ---------- FM 9-1

e. General.

Accident Reporting and Records ---------- AR 385-40
Army Equipment Record Procedures ---------- TM 38-750
Basic Cold Weather Manual ---------- FM 31-70
DSU/Installation Stock Control and Supply Procedures ---------- AR 711-16
Equipment Serviceability Criteria for: Utility Helicopters UH-1A and UH-1B ---------- TM 55-1520-211-ESC
Northern Operations ---------- FM 31-71
Operator's Manual: Army Models UH-1A and UH-1B Helicopters ---------- TM 55-1520-211-10
Organizational Maintenance Manual. Army Models UH-1A and UH-1B Helicopters ---------- TM 55-1520-211-20
Requisitioning, Receipt, and Issue System ---------- AR 725-50

f. Maintenance and Repair.

Cleaning of Ordnance Materiel ---------- TM 9-208-1
Command Maintenance Management Inspections ---------- AR 750-8
General Maintenance Procedures for Fire Control Materiel ---------- TM 9-254
Lubrication of Ordnance Materiel ---------- TM 9-273
Lubrication Order ---------- LO 9-1090-204-12
Materials Used for Cleaning, Preserving, Abrading and Cementing Ordnance Materiel; and Related Materials Including Chemicals ---------- TM 9-247
Organization, Policies, and Responsibilities for Maintenance Operation ---------- AR 750-5
Painting Instructions for Field Use ---------- TM 9-213
Technical Procedures: Elementary Optics and Application to Fire Control Instruments ---------- TM 9-258

g. Operations.

Operation and Maintenance of Army Materiel in Extreme Cold Weather 0° to -65° F ---------- TM 9-207

h. Shipment and Storage.

Preservation, Packaging, and Packing ---------- AR 700-15
Standards for Oversea Shipment and Domestic Issue of Ordnance Materiel Other Than Ammunition and Army Aircraft ---------- TB ORD-385
Storage and Materials Handling ---------- TM 743-200-1

APPENDIX B

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. Scope.

This appendix lists items which accompany the helicopter multiarmament mount XM156 or are required for installation, operation, or operator's maintenance.

2. Explanation of Columns.

The following provides an explanation of columns in the tabular list in section II:

a. Source, Maintenance, and Recoverability Codes, column 1, are as follows:

(1) Source Code, column 1a, indicates the selection status and source for the listed item. Source codes are:

Code	Explanation
P	Applied to repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system, and authorized for use at indicated maintenance categories.
M	Applied to repair parts which are not procured or stocked but are to be manufactured at indicated maintenance categories.
A	Applied to assemblies which are not procured or stocked as such but are made up of two or more units, each of which carry individual stock numbers and descriptions and are procured and stocked and can be assembled by units at indicated maintenance categories.
X	Applied to parts and assemblies which are not procured or stocked; the mortality of which is normally below that of the applicable end item; and the failure of which should result in retirement of the end item from the supply system.
X1	Applied to repair parts which are not procured or stocked, the requirement for which will be supplied by use of next higher assembly or component.
X2	Applied to repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain through cannibalization; if not obtainable through cannibalization, such repair parts will be requisitioned with supporting justification through normal supply channels.
C	Applied to repair parts authorized for local procurement. If not obtainable from local procurement, such repair parts will be requisitioned through normal supply channels with a supporting statement of non-availability from local procurement.
G	Applied to major assemblies that are procured with PEMA funds for initial issue only to be used as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above DSU and GSU level or returned to depot supply level.

(2) Maintenance Code, column 1b, indicate the lowest category of maintenance authorized to install the listed item. The maintenance level code is:

Code	Explanation
O	Organizational maintenance (operator/crew)

(3) Recoverability Code, column 1c, indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are:

Code	Explanation
R	Applied to repair parts and assemblies which are economically reparable at DSU and GSU activities and are normally furnished by supply on an exchange basis.

Code	Explanation
T	Applied to high dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts are normally repaired or overhauled at depot maintenance activities.
U	Applied to repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, high dollar value reusable casings or castings, etc.

b. Federal Stock Number, column 2, indicates the Federal stock number for the item.

c. Description, column 3, indicates the Federal item name and any additional description required. The abbreviation "w/e" when used as a part of the nomenclature, indicates the Federal stock number includes all armament, equipment, accessories, and repair parts issued with the item. A part number or manufacturer's part number in parenthesis will be included in the description column for reference.

d. Unit of Issue, column 4, indicates the unit used as a basis for issue, e.g., ea, pr, ft, yd, etc.

e. Quantity Incorporated in Unit Pack, column 5, indicates the actual quantity contained in the unit pack.

f. Quantity Incorporated in Unit, column 6, indicates the total quantity of the item used on the equipment.

g. Quantity Authorized, column 7, indicates the total quantity of an item required to be on hand and necessary for operation and maintenance of the equipment. Items to be requisitioned as required are indicated by an asterisk.

h. Illustration, column 8, is divided as follows:

(1) Figure Number, column 8a, indicates the figure number of the illustration in which the item is shown.

(2) Item or Symbol Number, column 8b, indicates the callout number used to reference the item in the illustration

3. Special Information.

Not applicable.

4. Abbreviations.

Abbreviations	Explanation
TM	Technical manual
w/e	with equipment

5. Federal Supply Code.

Federal Supply Code	Manufacturer
81349	Military Specifications
96906	Military Standard

SECTION II

BASIC ISSUE ITEMS LIST

(1) Source, maint. and recov. code (a) Source	(b) Maint.	(c) Recov.	(2) Federal stock No.	(3) Description	(4) Unit of issue	(5) Qty. inc. in unit pack	(6) Qty. inc. in unit	(7) Qty. furn. with equip.	(8) Illustration (a) Fig. No.	(b) Item No.
				MAJOR COMBINATION						
				The following item is requisitioned for initial use only.						
		T	1090–930–5018	MOUNT, MULTIARMAMENT, HELICOPTER: XM156, w/e (8432402).					1–1	
				COMPONENTS OF MAJOR COMBINATION						
				The items listed below are issued as components of the major combination. Replacement items will be requisitioned separately under their individual stock numbers. When the major combination is turned in, all components will be turned in.						
				MOUNT ASSEMBLY (11699590) (Issued ONLY as a component of the major combination.).					1–1	
P	O	R	1270–903–1105	SIGHT, REFLEX, HELICOPTER: XM60 (10541577)	EA	1	1	--	1–1	
P	O	--	1270–979–7121	BRACKET ASSEMBLY, DECAL: (10547354)	EA	1	1	--	1–1	
P	O	R	1270–065–0530	MOUNT, SIGHT, INFINITY REFLEX: (10511780).	EA	1	1	--	1–1	
				BASIC ISSUE LIST ITEMS REPAIR PARTS FOR:						
				SIGHT REFLEX: XM60 (10541577)						
P	O	--	6240–635–9798	LAMP, INCANDESCENT: (96906–16105–2)	EA	10	1	1	B–1	1
				TOOLS AND EQUIPMENT FOR:						
				The items listed below are packed with the subsystem. The indicated quantities are for one (1) mount.						
				MOUNT ASSEMBLY (11699590)						
			7510–763–5996	ENVELOPE, TRANSPARENT: (81349–E–43183)	EA	12	--	1	B–2	1
			1090–945–9875	HOOK, COCKING, BOMB RACK: (11699557)	EA	1	--	1	B–2	2
				Material Issued By Other Commodity Commands						
				Additional copies, when required, will be requisitioned from the Adjutant Generals Office.						
				MANUAL, technical, TM 9–1090–204–12	--	--	--	1		

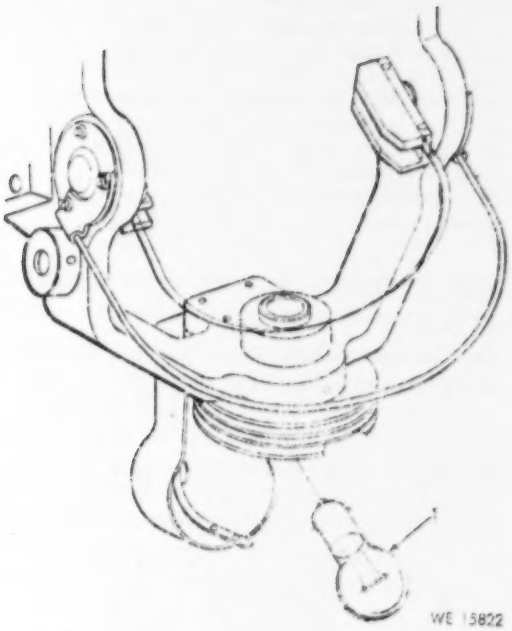


Figure B-1. Reflex sight XM60—partially exploded view.

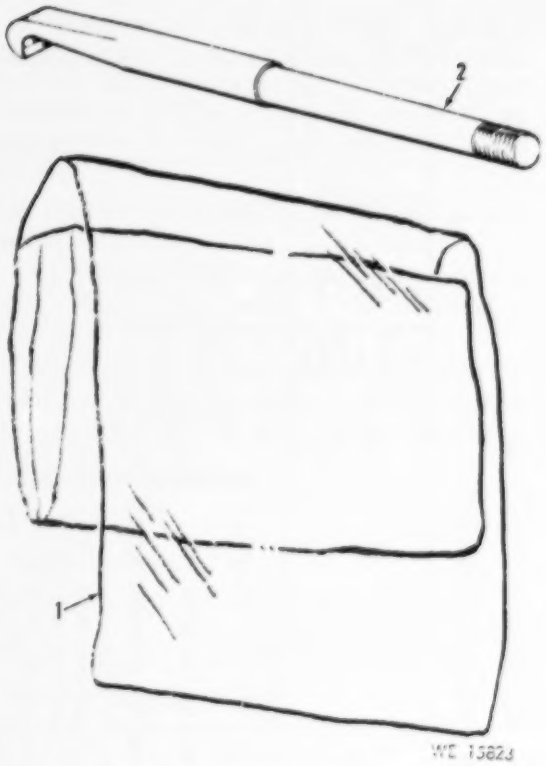


Figure B-2. Tools and equipment.

APPENDIX C

MAINTENANCE ALLOCATION CHART

1. Scope.

The Maintenance Allocation Chart (DA Form 3047–R) identifies for each component and assembly of the end item the maintenance operations that must be performed, and assigns each of these operations to the lowest level of maintenance capable of performing the task in terms of the availability of time, tools, test and support equipment, skills, and employment of the item.

2. General.

DA Form 3047–R is divided into four sections.

a. Section I of DA Form 3047–R contains definitions of the several classes of maintenance operations.

b. Section II is the maintenance assignment portion and contains the following data elements.

(1) *Group number.* The numerical scheme for grouping related components and assemblies.

(2) *Component assembly nomenclature.* A listing of the components and assemblies applicable to the end item and requiring maintenance. An assembly is a group of two or more physically connected or related parts which is capable of disassembly. A component is a group of connected assemblies and parts which is capable of operation independently, but which may be externally controlled or which may derive its power from another source.

(3) *Maintenance function.* The assignment of each item's maintenance operation to the lowest level of maintenance is recorded in the appropriate column by the maintenance level symbol "C" for operator/crew, "O" for organizational, "F" for direct support, "H" for general support, and "D" for depot maintenance.

(4) *Tools and equipment.* A reference code column for any special tool or test requirement with identification in section III.

(5) *Remarks.* A reference code column for items which have supplemental instructions in Section IV.

c. Section III lists the tools and equipment referenced in the MAC section, giving the nomenclature, tool or part numbers, and lowest category of maintenance authorized to use the item.

d. Section IV is used to record supplemental instructions explaining or illustrating a particular maintenance function.

SECTION I—GENERAL

This Maintenance Allocation Chart designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of field maintenance tasks upon this end item or component will be consistent with the assigned maintenance operations which are defined as follows:

Operation	Definition
Inspect	To verify serviceability and detect incipient electrical or mechanical failure by close visual examination.
Test	Verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of the item and comparing those characteristics with au-

Operation	Definition
	thorized standards. Tests will be made commensurate with test procedures and with calibrated tools or test equipment, section III.
Service	Operations required periodically to keep the item in proper operating condition, i.e., to clean, preserve, drain, paint, and replenish fuel, lubricants, hydraulic, and deicing fluids or compressed air supplies.
Adjust	To regulate periodically to prevent malfunction. Adjustment will be made commensurate with adjustment procedures and associated equipment adjustment specifications.
Aline	To adjust two or more components of an electrical or mechanical system so that their functions are properly synchronized.
Calibrate	To determine, to check, or to rectify the graduation of an instrument, weapon, or weapons system or components of a weapons system.
Install	Remove and install the same item for service or when required for the performance of other maintenance operations.
Replace	Substitute serviceable components, assemblies, and subassemblies for unserviceable counterparts.
Repair	Restore to serviceable condition by replcing unserviceable parts or by any other action required, using available tools, equipment, and skills including welding, grinding, riveting, straightening, adjusting, and facing.
Overhaul	Restore an item to completely serviceable condition (as prescribed by serviceability standards developed and published by the commodity commands) by employing techniques of "Inspect and Repair Only as Necessary" (IROAN). Maximum use of diagnostic and test equipment is combined with minimum disassembly during overhaul. "Overhaul" may be assigned to any level of maintenance except organizational, provided the time, tools, equipment, repair parts authorized and technical skills are available at that level. Normally, overhaul as applied to end items, is limited to depot maintenance level.
Rebuild	Restore to a condition comparable to new by disassembling to determine the condition of each component part and assembling using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

Group Number a	Component assembly nomenclature b	Maintenance function c											Tools and equipment d	Remarks e
		Inspect	Test	Service	Adjust	Aline	Calibrate	Install	Replace	Repair	Overhaul	Rebuild		
1	MOUNT, MULTIARMAMENT HELICOPTER: XM156	O	F	O	O	--	--	F	--	O	H	D	1-B, 1-G	
2	RACK AND SUPPORT ASSEMBLY, left and right hand	O	--	O	O	--	--	F		O	H	D	2-G	
3	RACK, BOMB, AIRCRAFT: LA4A	O	O	--	--	--	--	O	O	F	H	D		
4	INTERVALOMETER, ROCKET LAUNCHER:	O	F	--	F	--	--	O	O	O	H	D	4-D	
5	PANEL, ARMING, ROCKET LAUNCHER:	O	F	--	--	--	--	O	O	O	H	D		
6	SIGHT, REFLEX: XM60	O	--	O	--	--	--	O	O	O	D			F-J, F-K
7	BRACKET ASSEMBLY, DECAL:	O	--	--	--	--	--	O	O					
8	MOUNT, SIGHT, INFINITY REFLEX:	O	--	--	--	--	--	O	O	O				

SECTION III—TOOL AND TEST EQUIPMENT REQUIREMENTS

Tool or test equipment reference code	Maintenance category	Nomenclature	FSN	Tool Number
1–B				
1–G	F	TEST SET, ARMAMENT SUBSYSTEM: for XM16	4933–912–3215	
1–G	O	HOOK, COCKING, BOMB RACK:	1090–945–9875	
2–G	F	WRENCH, TORQUE: Part of TOOL SET, AIRCRAFT ARMAMENT REPAIRMAN: MOS 45J20, basic (FSN 4933–987–9816) (Listed in SC 4933–95–C1–A13.)	5120–542–4489	
4–D	F	OSCILLOSCOPE: Authorized by SC 4933–95–CL–A14 for TOOL SET, AIRCRAFT ARMAMENT REPAIRMAN: MOS 45J, supplemental (FSN 4933–944–9242)	6625–787–0304	

SECTION IV—REMARKS

Reference code	Remarks
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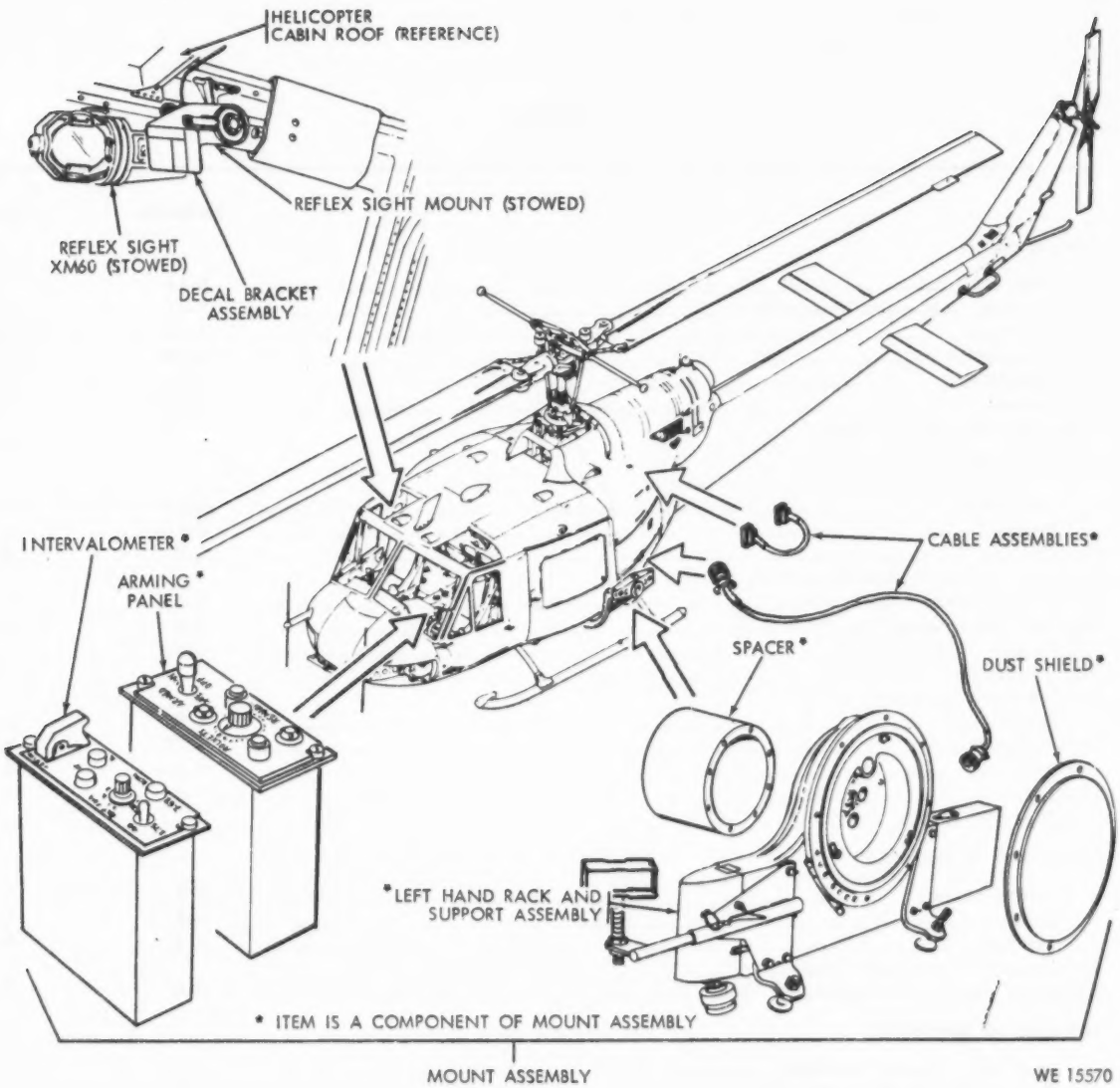

Figure 1-1. Components of helicopter multiarmament mount XM156 located on the UH-1B or UH-1C helicopter—left front view.

a. *Mount Assembly (fig. 1-1).* The mount assembly consists of several connected or related items and hardware as follows: electrical cable assembly (helicopter-cargo compartment); left hand and right hand rack and support assemblies and their hookup electrical cable assemblies, offset mounting spacers, and dust shields; mechanical jettison cable assemblies and necessary brackets, pulleys, cable guards, and turnbuckle body; intervalometer; and arming panel.

(1) *Rack and support assemblies (fig. 1-1).* The left hand and right hand rack and support assemblies authorized for the multiarmament mount XM156 are identified by the machined hexagon

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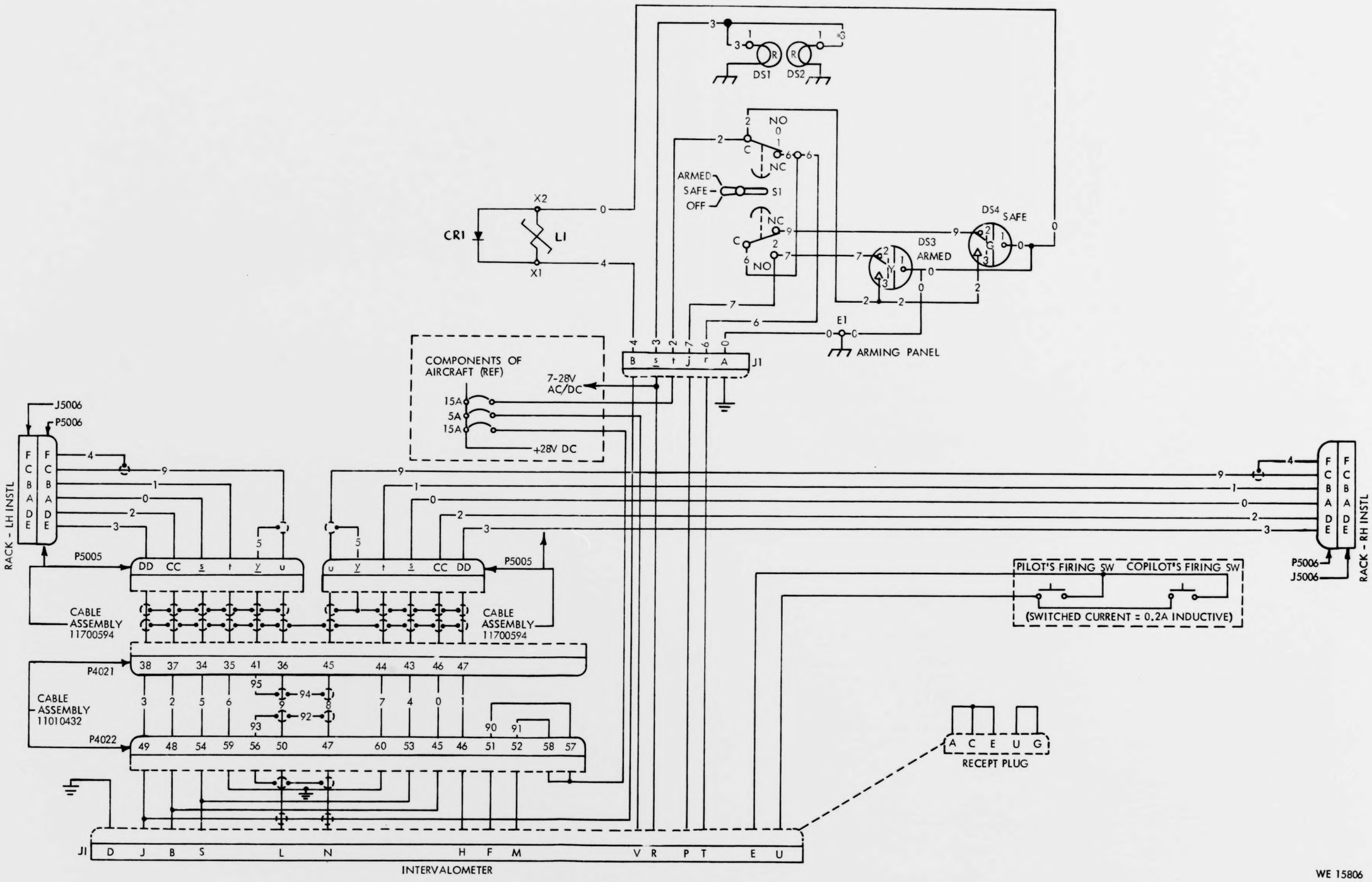

Figure 3-3. Electrical schematic of mount XM156 (sheet 1 of 4).

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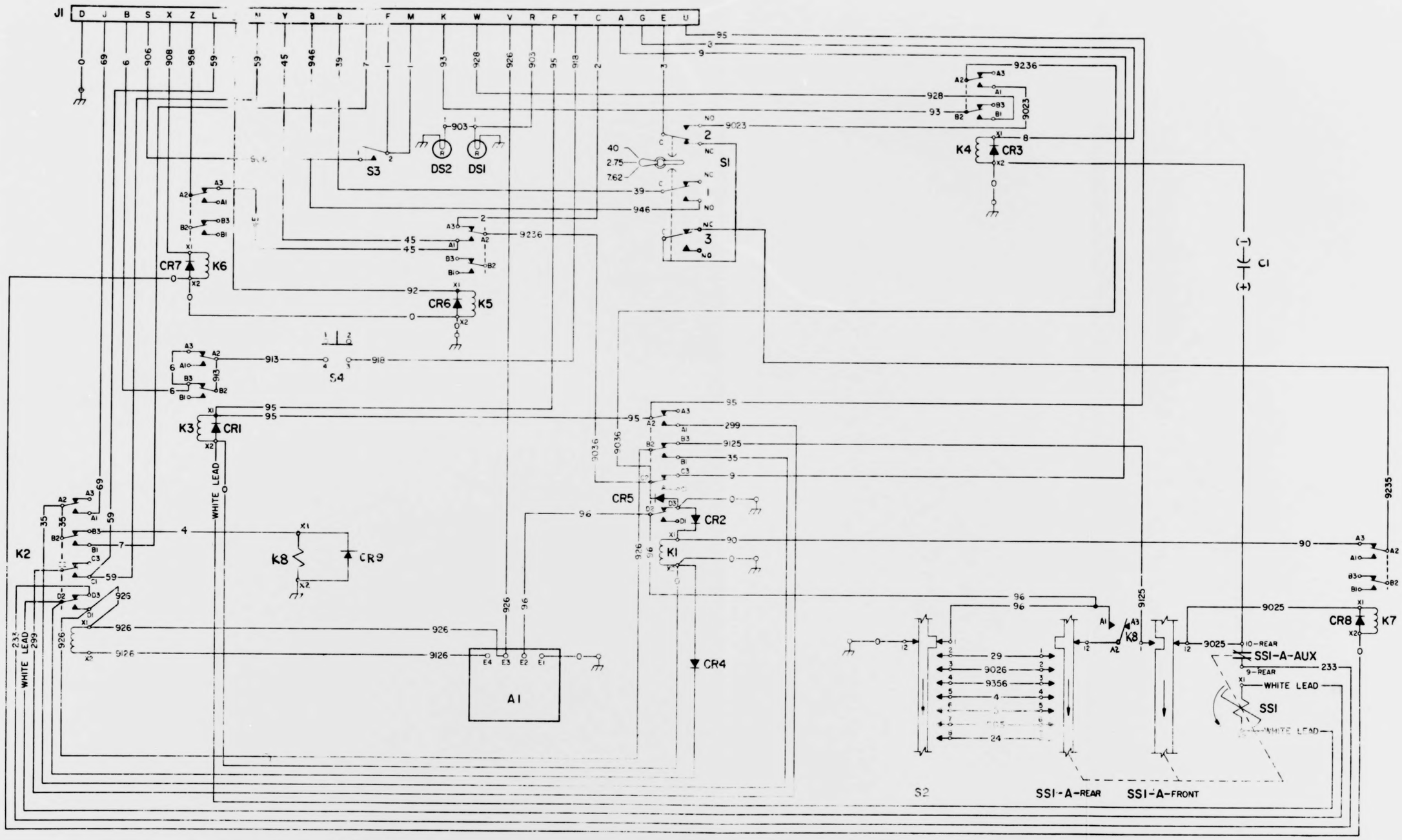

Figure 3–3. Electrical schematic of mount XM156 (sheet 2 of 4).

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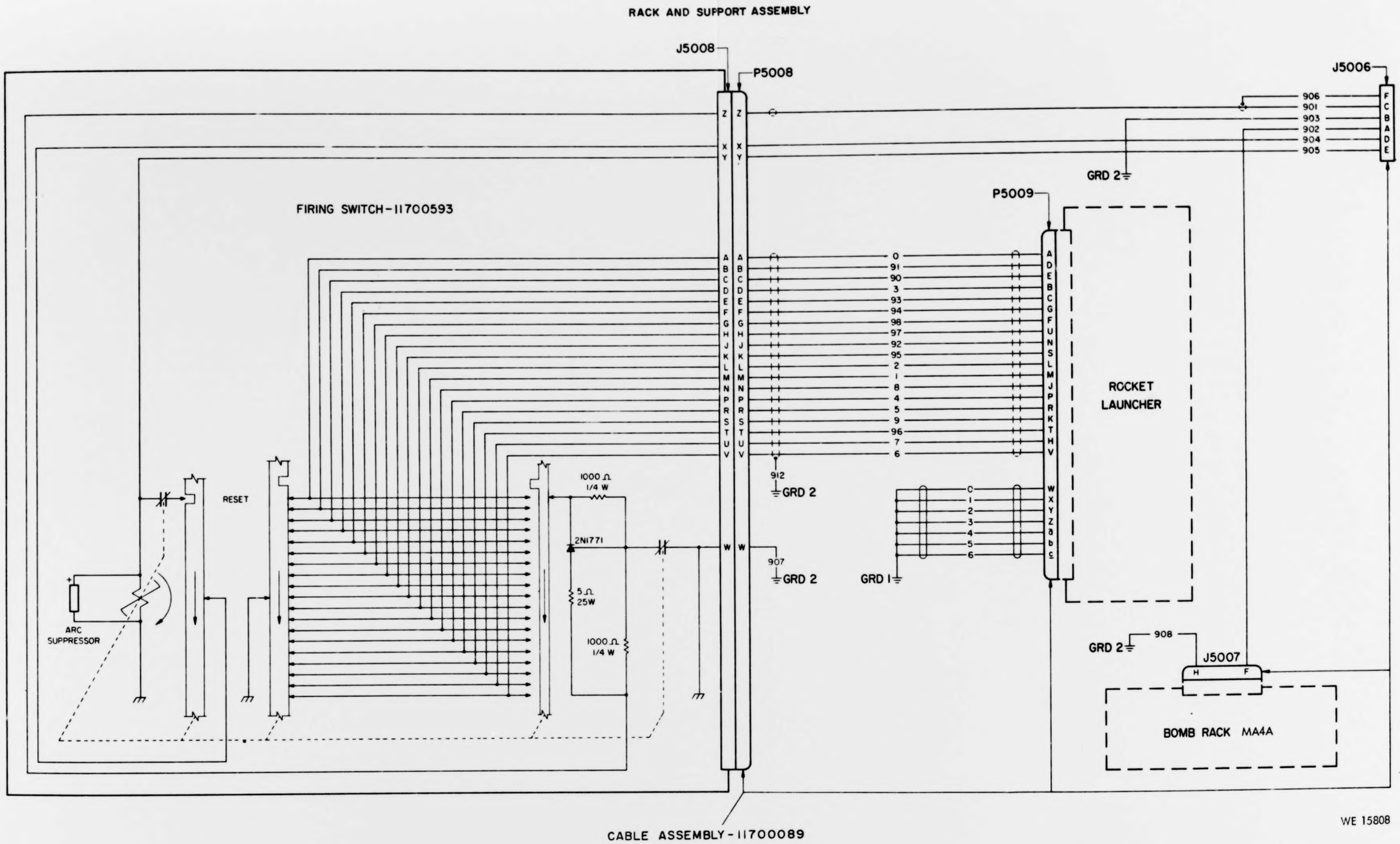

Figure 3–3. Electrical schematic of mount XM156 (sheet 3 of 4).

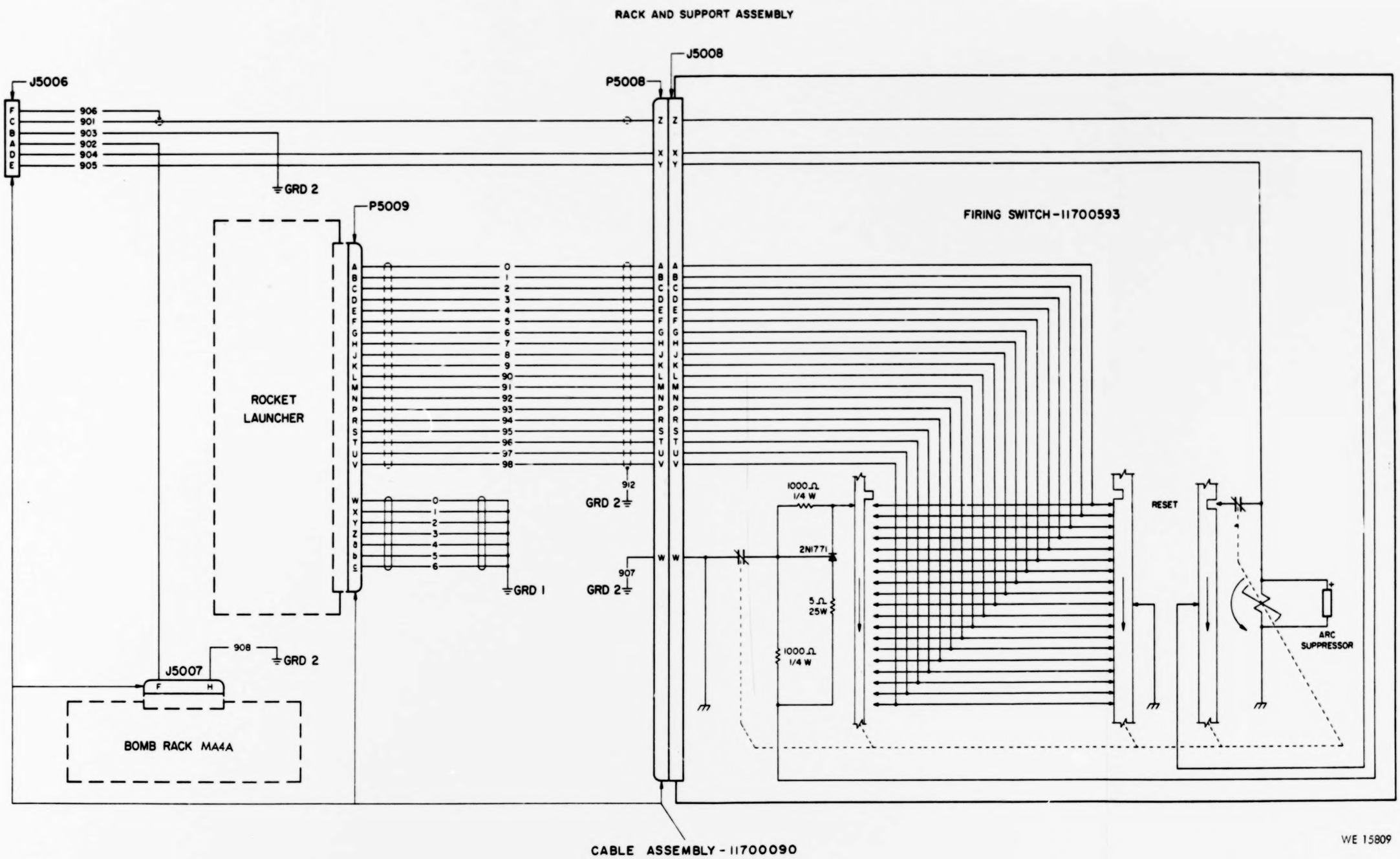

Figure 3-3. Electrical schematic of mount XM156 (sheet 4 of 4).